Ministry of Natural Resources

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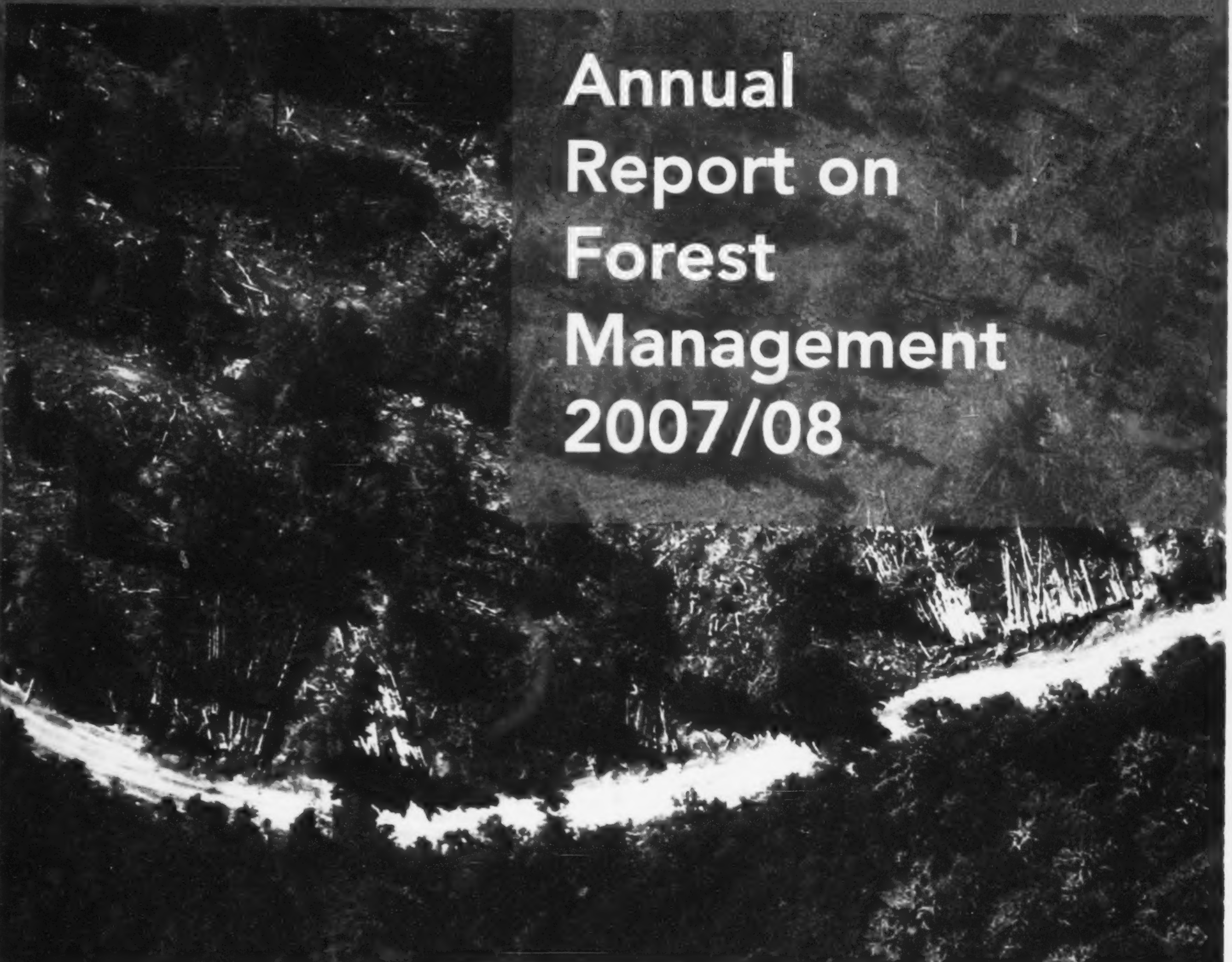
Annual Report on Forest Management 2007/08



Annual Report on Forest Management

For the year April 1, 2007
to March 31, 2008

Ontario

Minister of Natural Resources
of the Province of Ontario

To his Honour
The Lieutenant-Governor of the
Province of Ontario

May it please your Honour

The undersigned begs respectfully to present to your Honour the Annual Report on Forest Management for the fiscal year beginning April 1, 2007 and ending March 31, 2008.

Linda Jeffrey
Minister

December, 2009

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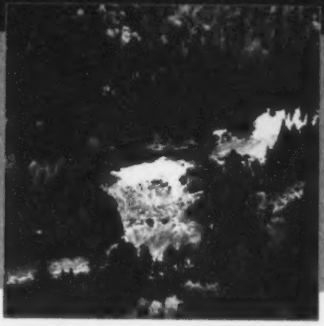
Executive Summary



The original approval for timber management activities under the *Environmental Assessment (EA) Act* covered nine years from 1994 to 2003. A review of the implementation of the original EA concluded in June 2003, when the Ministry of the Environment (MOE) issued a declaration order. The MOE declaration order extended and amended the 1994 Class EA approval and outlined conditions for forest management on Crown land in Ontario within the area of the undertaking (AOU). One of the conditions required the Ministry of Natural Resources (MNR) to continue to table an annual report on forest management in the provincial legislature.

This is the MNR's thirteenth annual report on forest management under an EA approval. This report follows a format which is consistent with the conditions of the 2003 Class EA approval for forest management on Crown lands in Ontario. It covers the fiscal year April 1, 2007 to March 31, 2008.

Ontario's 107.6 million hectare area is comprised of about 88.3 million hectares of land and 19.3 million hectares of water. The AOU, where most forest management activities on Crown land occur, totals 36.5 million hectares of forest. Productive forest on Crown land in the AOU covers about 26.2 million hectares, with only 18.8 million hectares of this area eligible for forest management activities. The focus of this annual report is to provide information on the activities carried out on the eligible 18.8 million hectares of Crown forest in 2007/08.

The Crown Forest Sustainability Act (CFSA) provides for two types of licences governing the use of forest resources in Ontario, Forest Resource Licences and Sustainable Forest Licences. In 2007/08, there were a total of 3,628 licences in place in Ontario.

The CFSA requires a portion of the money received from the harvest of Crown forests to be designated exclusively for forest renewal activities. The Government of Ontario received a total of approximately $130 million from timber sales, of which approximately $91 million went directly to funds designated for the maintenance and renewal of the forest, and for work associated with ensuring the future of the forest.

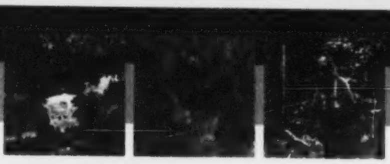
In 2007/08, forest fires occurred on 30,279 hectares of productive forest in the AOU. Other natural disturbance events such as weather, insect and disease activity in the AOU resulted in significant wood fibre growth loss and mortality.

Harvesting activities took place on 158,478 hectares of forest in 2007/08, generating approximately 16 million cubic metres of wood. In 2007/08, thirty eight management units in the Boreal forest region reported average clearcut sizes ranging from 38 to 831 hectares and maximum clearcut sizes ranging from 38 to 3,666 hectares. There were 1,085 active clearcuts during the year. Of these clearcuts, 109 (10%) had current harvest areas larger than 260 hectares in size.

Nine management units within the Great Lakes-St. Lawrence Forest reported average clearcut sizes from 10 to 98 hectares. Maximum clearcut sizes ranged from 47 to 454 hectares in size. There were 209 active clearcuts created in this region during the year, 3 (1%) of which had current harvest areas larger than 260 hectares.

Renewal of the forest occurs both naturally and with assistance. In 2007/08, natural regeneration, both even and uneven-aged, took place on 93,294 hectares of land. Assisted renewal was carried out on 107,892 hectares. Site preparation activities, through mechanical means, use of herbicides and one small prescribed burn were completed on another 57,023 hectares. Tending activities were also conducted to improve the quality and growth of some areas of the forest. During 2007/08, tending activities such as aerial chemical tending, spacing and improvement cutting were carried out on 77,711 hectares of forest.

Free-To-Grow (FTG) assessments are an effectiveness monitoring tool that indicate the success of silvicultural treatments and provide information to project the future forest condition. In 2007/08, approximately 247,000 hectares were assessed. Of the total area assessed for FTG, 86 percent was approved as having met an acceptable standard. The remaining 14 percent either required more time to meet the height standard, additional tending to deal with competing vegetation, or a re-treatment.



Forest management operations require a complex system of primary, branch (secondary) and operational roads. A total of 664 kilometres of new primary and branch roads were constructed in Ontario forests. In 2007/08, the MNR provided approximately $75.0 million dollars for road construction and maintenance activities. Maintenance work occurred on 20,623 kilometres of road.

The forest industry is required to report the results of their compliance inspections to the MNR. The MNR conducts inspections to verify all instances of non-compliance reported by companies. The MNR also carries out random and other planned inspections of forest operations. Of the 4,806 inspections undertaken across the province, companies conducted 3,908 and the MNR completed 898. The vast majority of the inspections reported compliant operations. A total of 239 remedial actions were applied by the MNR, including warnings, "stop work" orders and administrative penalties.

All management units within the AOU must be audited at least once every five years. In 2007/08, Independent Forest Audits were undertaken on nine management units. Audit reports were prepared for the Algonquin Park, Crossroute, Hearst, Martel, Nagagami, Northshore, Pineland, Romeo Malette and Sapawe forests. All 2007 audit reports concluded that the forests were being managed in general compliance with legislation and policy, with licence requirements, and with principles of sustainable forest management during the term of the audit. All audit reports recommended the sustainable forest licence be extended for a further five-year term. In the case of the Algonquin Park Forest the audit team recommended the Algonquin Park Forestry Agreement be extended for a five-year term.

Forest certification involves an independent third party evaluating forest management systems and/or operations against a prescribed ecological, economic and social standard. During the 2007/08, eight forests achieved forest certification for the first time. Six forests achieved SFI certification, one was certified to the CSA standard, and one was certified to the FSC standard. In addition, all previously registered / certified forest units continued efforts to demonstrate ongoing conformance to their selected certification systems during the fiscal year.

A primary monitoring responsibility of the MNR is to assess the effects of forest management activities on the forest ecosystem over the long term. This report describes policies, procedures, scientific studies and research that the MNR is undertaking to ensure that forest management guides, data, methodologies, and underlying science are available to effectively monitor and manage forest management activities.

The final chapter of this report describes the efforts of MNR districts, the forest industry, and First Nations communities to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits derived through forest management planning.

Introduction

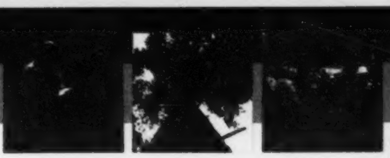
In 2003 an Environmental Assessment (EA) declaration order extended and amended the 1994 Environmental Assessment Act approval to allow the MNR to continue forest management on Crown lands in Ontario, subject to certain conditions. This declaration order (as amended, MNR 71/2) covers a wide range of activities relating to forest access, harvest, renewal, maintenance and planning on Crown land. This is the fourth annual report that has been produced consistent with the current EA declaration order.

Annual Report on Forest Management

This is the 13th annual report on forest management, covering the period April 1, 2007 to March 31, 2008. This report contains, in part, a summary and analysis of 46 management unit reports which were submitted to the MNR in November 2008. Unless otherwise stated, information portrayed in tables and figures in this provincial annual report are sourced from the management unit reports. The data is subject to ongoing improvement and the reader is advised that changes in data may occur as improvements are made to the dataset. New or updated data and information submitted since the previous annual report on forest management are included in this report. Errors or omissions noted since the publication of the previous report are also corrected or updated in this report. Minimal rounding errors may occur in this report due to the precision of the numbers being displayed.

Overview

This annual report provides information to help in understanding how Ontario's Crown forests are being managed, as well as baseline information to compare with future forest management activities and annual reports. Five year tables and graphs are included in this report to provide updated information and a means to view and assess trends in the data.



Crown forest resources within the Area of Undertaking (AOU) and their associated programs are the main focus for this annual report. MNR programs that deal with private land or provincial parks are not reported in this document. More information about MNR programs not related to Crown forest resources is available at http://ontariosforests.mnr.gov.on.ca.

In order to increase public transparency, the format of this annual report has been revised from previous annual reports to highlight key information related to the management of Ontario's Crown forest resources. It is hoped that as a result of these changes, the overall quality and comprehensiveness of the information provided, will give the public a better understanding of how Crown forest resources are being managed in Ontario.

The chapters of this annual report are described as follows:

- Chapter 1 provides a background summary of the forests of Ontario and the legislative framework which regulated forest management planning activities in 2007/08;
- Chapter 2 summarizes forest industry output and employment, Ontario's stumpage and the licence system;
- Chapter 3 summarizes forest disturbances in Ontario, including fire, severe weather, insects and disease;
- Chapter 4 describes the silvicultural systems used in Ontario and summarizes forest harvest activities;
- Chapter 5 summarizes forest renewal efforts and silvicultural effectiveness monitoring results;
- Chapter 6 presents a summary of road construction and maintenance activities, and the funding provided for these activities;
- Chapter 7 presents a description of the system employed by the MNR to monitor operational compliance with legislation and in accordance with approved plans;
- Chapter 8 describes and summarizes the results of Ontario's Independent Forest Audit Program;
- Chapter 9 outlines the status of forest certification in Ontario;
- Chapter 10 presents progress reports on selected MNR research, scientific studies, and technical and policy development programs; and
- Chapter 11 concludes with an update on the MNR's progress in negotiations with Aboriginal peoples regarding opportunities for increased participation in the benefits provided through forest management planning.

1. Ontario's Forests

Throughout this document, Crown land refers to land vested in Her Majesty in right of Ontario and, in general, managed by the MNR. Statistics found in this chapter are from provincial inventories compiled in *Forest Resources of Ontario 2006. Forest Resources of Ontario 2006* should be consulted for a more complete description and summarization of the provincial inventories.

Ontario is approximately 107.6 million hectares in size; 88.3 million hectares of this area is land and 19.3 million hectares is water. Figure 1a illustrates the broad land classes in Ontario. Non-productive and productive forests comprise over sixty-five percent of the province (Figure 1b). This is a significantly higher proportion than the remainder of Canada, where forests represent only forty-two percent of the country's total area.

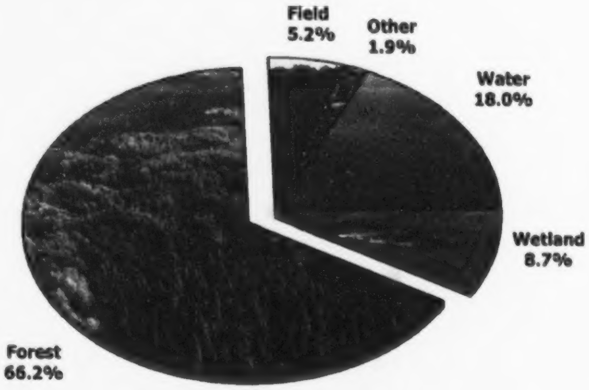


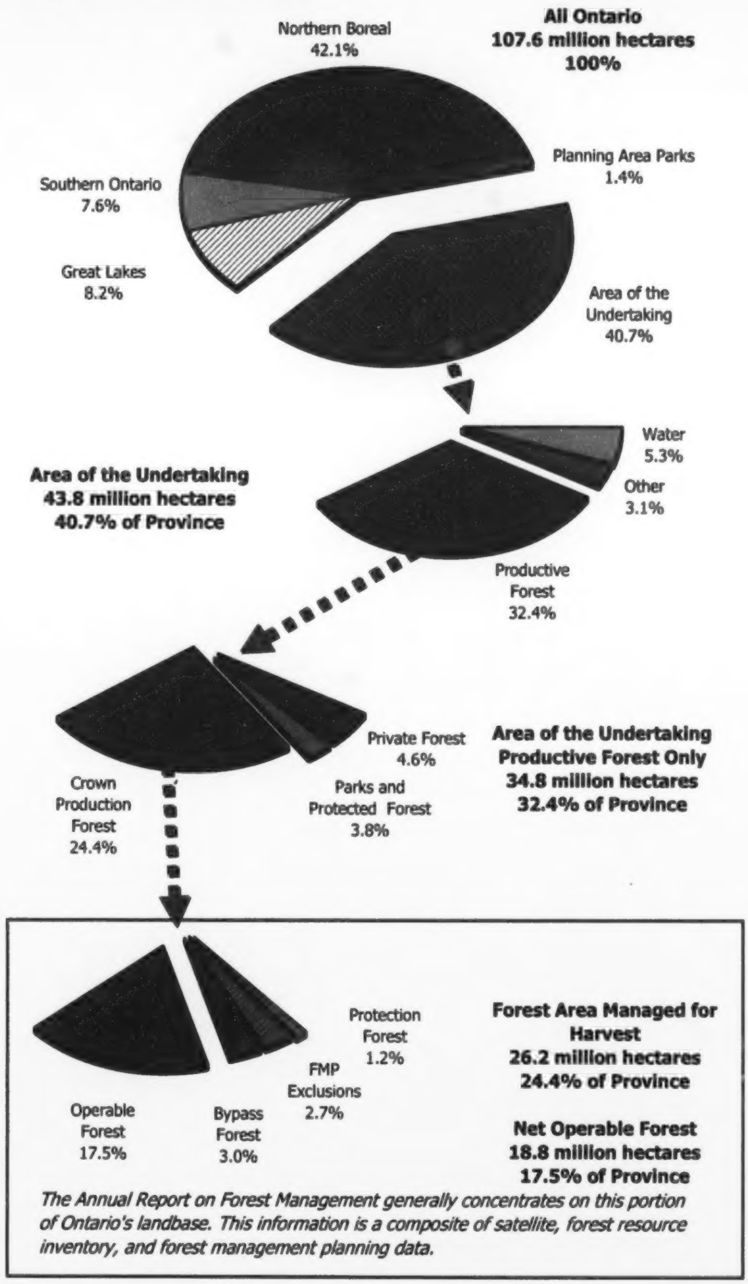
Figure 1a - Total land and water area by land classes in Ontario

Three major land ownership categories are described in this chapter - Crown, parks, and private or other owners (based on satellite classifications; Table 1a). Seventy-eight percent of the province's area is Crown or publicly-owned land and water (Figure 1c). Provincial and national parks cover an additional nine percent, and privately or federally-owned land and water encompasses the remaining thirteen percent.

The forest area managed for harvest in Ontario is 26.2 million hectares in size. Within this area the net forest area available for forest operations is limited to 18.8 million hectares, or 17.5 percent of Ontario (Figure1b).

For forest management purposes, the province is partitioned geographically, depending on the context. Some administrative units referenced in this report include management units, districts and regions.

Figure 1b - Ontario's Landbase



The Annual Report on Forest Management generally concentrates on this portion of Ontario's landbase. This information is a composite of satellite, forest resource inventory, and forest management planning data.

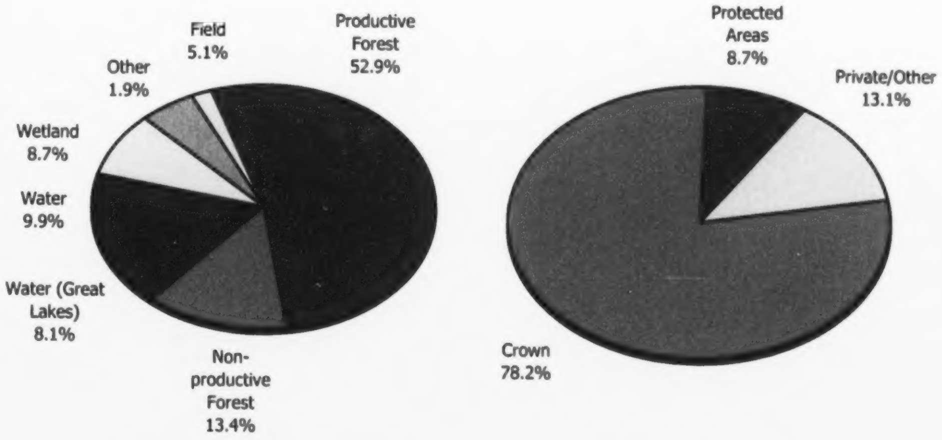
Table 1a - Total Provincial Area by Satellite Classifications, 2006[1]

Area in thousands of hectares

	Total Provincial Area				Area of the Undertaking (AOU)			
Land Class	Crown	Protected Areas	Other	Total	Crown	Protected Areas	Other	Total
Non-forested Land/Water								
Water (Great Lakes)	8,517.3	169.8	0.0	8,687.1	0.0	0.0	0.0	0.0
Water	9,118.0	1,559.2	0.0	10,677.2	4,833.1	883.9	0.0	5,716.9
Wetland	8,175.7	1,065.6	130.9	9,372.2	271.0	60.7	34.0	365.7
Rock	258.6	105.0	183.3	546.8	103.9	58.3	115.1	277.3
Field/Agriculture	27.5	5.6	5,501.3	5,534.4	16.1	0.8	571.1	587.9
UCL	56.5	2.8	536.7	596.0	41.9	2.0	148.2	192.1
Other	480.0	337.2	93.6	910.8	111.7	31.5	36.6	179.9
Subtotal:	26,633.6	3,245.4	6,445.7	36,324.6	5,377.7	1,037.2	905.0	7,319.8
Non-productive Forest								
Swamp	1.2	1.8	118.4	121.4	0.0	0.3	19.5	19.9
Treed Bog & Fen	12,757.0	1,114.3	391.8	14,263.1	1,337.2	167.3	170.8	1,675.2
Subtotal:	12,758.2	1,116.1	510.2	14,384.5	1,337.2	167.6	190.3	1,695.1
Productive Forest								
Dense Deciduous	3,235.0	524.9	1,912.1	5,672.0	2,942.7	295.6	1,174.8	4,413.1
Dense Conifer	13,513.7	1,426.7	1,069.8	16,010.1	7,702.8	949.4	740.1	9,392.3
Mixed Forest	11,617.5	1,534.6	2,657.1	15,809.2	9,463.0	1,011.3	1,940.7	12,415.0
Sparse Forest	11,350.6	1,109.9	1,206.3	13,666.7	4,517.6	587.7	913.5	6,018.7
Disturbance - Harvest	2,042.1	32.9	189.9	2,264.9	2,040.8	32.1	162.5	2,235.5
Disturbance - Fire	1,893.8	236.7	42.2	2,172.7	207.1	74.0	4.7	285.9
Regenerating Forest	1,097.4	99.1	52.9	1,249.4	23.2	5.6	4.2	33.0
Subtotal:	44,750.0	4,964.8	7,130.2	56,845.0	26,897.3	2,955.7	4,940.5	34,793.5
All Forest:	57,508.2	6,081.0	7,640.4	71,229.5	28,234.5	3,123.3	5,130.8	36,488.6
Grand Total:	**84,141.7**	**9,326.3**	**14,086.1**	**107,554.2**	**33,612.2**	**4,160.5**	**6,035.8**	**43,808.4**

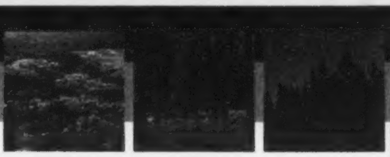
[1] The information reported is updated on a 5 year cycle, and will differ slightly from inventory summaries due to source

Figure 1c - Total Provincial Area by Land Class and Ownership



Total Provincial Area by Land Class

Total Provincial Area by Ownership



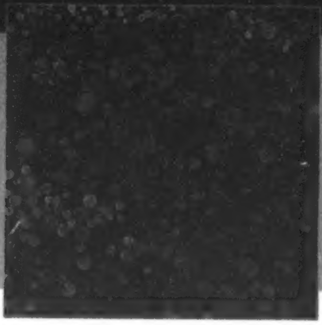
Forest Management Planning

The *Crown Forest Sustainability Act* (CFSA), which came into effect in 1994, requires anyone operating in an Ontario Crown forest to ensure the long-term health of the forest so that the benefits from the province's forests are available to future generations. The CFSA requires that an approved Forest Management Plan (FMP) be in place for each management unit. A FMP describes the values of the forest in a management unit, as well as the harvesting, renewal, and other forest management activities that will occur. In 2007/08, six FMPs were approved and fully implemented under the new Forest Management Planning Manual (2004).

Forest Information Manual

The *Forest Information Manual* (FIM) is one of four regulatory manuals required by the CFSA. This manual describes the requirements for exchanging information concerning the management of Crown forests between the forest industry and the MNR. In 2007, a new version of the FIM was approved. To facilitate information exchange between the MNR and the forest industry, a new set of FIM technical specifications to support management unit annual reporting was also produced. These technical specifications were used by the MNR and the forest industry during the 2007/08 reporting period.

2. Forest Products Industry



Ontario's forests supply the basic resources for a variety of industries including lumber, structural board, pulp, paper, and newsprint. In addition, facilities that support forest activities and numerous service industries also depend on Crown forests.

The forest products industry is comprised of logging, wood products and paper manufacturing sectors, plus other related industries. The logging industry includes both large and small contractors, as well as large and small mill-owned operations. Contractors may work independently or directly for company-owned mills.

The wood product manufacturing industries include primary manufacturing businesses such as sawmills, veneer mills, and structural board plants producing both construction materials and specialty wood products from raw wood fibre (trees). The capital investments in these facilities range from a few thousand dollars to over $250 million. The value-added wood product industry further re-manufactures primary wood products such as lumber into various higher value wood products such as millwork (doors and windows), cabinetry, architectural woodwork, pre-fabricated housing, etc. The revenue generated from the sale of products manufactured by the wood industries includes sales from primary manufacturers as well as the value-added wood product industries. In Ontario, approximately 56% of forest product revenue from wood product manufacturing is generated from the sale of value-added wood products.

The paper industries also include primary and secondary or value-added manufacturing. Primary pulp mills produce pulp for sale to paper manufacturers in Ontario and throughout the world. Primary paper manufacturers produce products such as newsprint and various types of papers such as uncoated, coated, supercalender and construction paper. Primary mills also produce linerboard and corrugated medium, which when combined produces cardboard.

Forest industry mill yard in Northern Ontario

Primary mills use one or a combination of, wood chips, logs and recycled paper as their primary furnish. Secondary paper mills purchase either pulp or paper and add further value by turning out products such as book paper, labels, wrapping paper, various sanitary products, etc. In Ontario, just over 50% of the revenue generated by the paper industries comes from the value-added secondary manufacturers. Revenue from paper industry mills represents almost 55% of the value of all forest product sales.

Value added is based on the amount the industry actually contributes to the Ontario gross provincial product. Measuring and reporting value added contributions of the forest industry eliminates the double counting effect of sales between the forest products manufacturers and their suppliers.

The forest products industry employs thousands of people across Ontario. Employment in the forest industry includes direct, indirect and induced employment. Direct employment refers to employment directly related to the production of forest products or services. As a result of this direct employment, employment is also generated in the businesses that supply goods and services to the forest sector. This is referred to as indirect employment. Finally, when these directly and indirectly generated incomes are spent and respent on a variety of items in the broader economy (e.g., food, clothing, entertainment), it gives rise to induced employment effects.

As well as being a major employer, the forest industry annually invests in capital improvements and mill expansions. The increasingly tough operating environment has impacted the industry's ability to re-invest in their operations.

Summary of Forest Sector Revenues and Value Added - 2007/08

- The industry's competitiveness has declined. The most negative influence on Canada's competitiveness is the increase in the value of the Canadian dollar which increases the cost base in U.S. dollar terms for Canadian companies;
- The Canadian dollar averaged 93 cents U.S. in 2007 up from 88 cents U.S. in 2006. Adding to this increasing cost base are increases in electricity and fuel costs. These extra costs, coupled with an increased level of inexpensive wood based product imports, mostly from China, are taking their toll on Ontario's forest products industry;
- The slowing U.S. economy and associated reduction in consumption of goods and services has also negatively impacted the forest products industry in Ontario;
- Revenues from sales from Ontario's forest product sector has declined recently from $18.9 billion in 2003 to just over $15 billion in 2007 (Table 2a);
- Value added forest industry contributions to the gross provincial product has fallen steadily since 2004; and
- Value added manufacturing, excluding logging, declined to $5.0 billion in 2007/08 from $5.7 billion in 2006/07 (Table 2b).

Table 2a - Ontario forest products sector sales

Year	Value of Shipments (million $)
2003	$18,920
2004	$19,501
2005	$18,802
2006	$17,066
2007	$15,281

Source: Statistics Canada 2006

Table 2b - Distribution of manufacturing activities by sector and direct employment in each sector in 2007/08

Sector	Number of Establishments		Number of Employees		Manufactured Value Added	
	Number	% of Canadian Total	Number	% of Canadian Total	Value Added (million $)	% of Canadian Total
Wood Product Manufacturing	1,656	27%	21,010	19%	$1,694	18%
Paper Manufacturing	454	45%	23,798	34%	$3,333	30%
Total	**2,110**	**31%**	**44,808**	**24%**	**$5,027**	**21%**

Source: Statistics Canada
Employment figures are taken form the Annual Survey of Manufacturers issued by Statistics Canada

Summary of Forest Sector Re-investment - 2007/08

- Capital and repair expenditures continue to decline year over year. The forest industry spent $986 million in capital and repair expenditures in 2007/08. This is down from $1.11 billion spent in 2006/07, and dramatically lower from 2000/01 when the forest industry re-invested over $1.5 billion in facility (mill) repairs and new equipment.

Summary of Employment - 2007/08

- Based on 2006 Canada census data, 28 Ontario communities, mostly located in Northern Ontario, had at least 20 percent of their labour force employed in the forest industry. Appendix 4 lists these Ontario communities, shows the total labour force for each community and identifies the percentage that worked in the forest sector. The next scheduled update for Canada census data for Ontario will be in 2011;
- Employment within the forest industry was estimated at 168,000 jobs (estimates include direct, indirect and induced) ;
- The forest industry continued to experience a large number of layoffs and mill closures. 5,454 mill employees lost their jobs, compared to 10,107 job losses in 2006/07 (Table 2c).

Table 2c - Total Cumulative Layoffs & New Jobs at Ontario Forest Industry Mills By Year

Sector	2004	2005	2006	2007	2008	Total
Sawmill Sector - Permanent	-151	-325	-170	-41	-52	-739
Sawmill Sector - Temporary	-61	-843	-3,410	-1,278	-515	-6,107
Sawmill Sector - Indefinite	0	-100	-766	-1,183	-382	-2,431
Sawmill Sector - Job Created	0	187	32	5		224
Pulp & Paper Sector - Permanent	-428	-1,080	-3,038	-925	-375	-5,846
Pulp & Paper Sector - Temporary	-100	-1,740	-1,280	-1,030	-2,192	-6,342
Pulp & Paper Sector - Indefinite	-65	0	-803	-205	-180	-1,253
Pulp & Paper Sector - Jobs Created	0	0	440	311	260	1,011
Board Sector - Permanent	-106	0	0	-280		-386
Board Sector - Temporary	0	-300	0	-115	-173	-588
Board Sector - Indefinite	-41	-249	-618	-208	-87	-1,203
Board Sector - Jobs Created	140	18	14	12		184
Value-Added - Permanent	0	0	-22	-41	-50	-113
Value-Added - Temporary	0	0	0	-148	-213	-361
Value-Added - Indefinite	0	0	0	0		0
Value-Added - Jobs Created	0	6	0	53		59
Total Layoffs	**-952**	**-4,637**	**-10,107**	**-5,454**	**-4,219**	**-25,369**
Total Permanent Layoffs	-685	-1,405	-3,230	-1,287	-477	-7,084
Total Indefinite Layoffs	-106	-349	-2,187	-1,596	-649	-4,887
Total Temporary Layoffs	-161	-2,883	-4,690	-2,571	-3,093	-13,398
Total New Jobs Created	140	211	486	381	260	1478

Note: Yearly summary numbers are best estimates from the information provided. Also note that temporary layoffs represent total cumulative temporary layoffs which occurred that particular year, regardless of length (i.e. days, weeks, months).

Harvest Licence System

Ontario's Crown forests are only harvested by companies or individuals that hold one of two types of licences - Sustainable Forest Licences (SFLs) or Forest Resource Licences (FRLs). Among other requirements, a SFL requires the licensee to prepare forest management plans following the direction of the *Forest Management Planning Manual for Ontario's Crown Forests*. The licensee is responsible for implementing forest management plans by carrying out access, harvest, renewal and maintenance activities. The SFL holder must follow the rules and guidelines set by the MNR to ensure sustainable forest management.

FRL holders follow forest management plans approved by the MNR and must operate to ensure the long-term health of the forest. Issuance of FRLs on lands under a SFL require an overlapping agreement since all forest resources on SFL lands have previously been licensed to the holder of the SFL. An overlapping agreement normally contains terms and conditions that companies require to conduct day to day business. The agreements also contain legal requirements that must be complied with. This licence type is commonly referred to as an overlapping FRL.

Summary of the Harvest Licence System - 2007/08

- The total number of licences issued in 2007/08 was 3,628, most of which were overlapping FRLs (Table 2d).

Table 2d - Number of active licences in 2007/08 by licence type

Licence Type	Overlapping	Not Overlapping	Total
Sustainable Forest Licence	0	45	45
FRL less than 300 hectares	3,013	518	3,531
FRL greater than 300 hectares	52	0	52
Salvage	0	0	0
Total	**3,065**	**563**	**3,628**

Ontario's Stumpage System

The Government of Ontario receives direct payments from the forest industry in the form of stumpage fees and indirect revenue from taxes. Forest companies pay a stumpage fee to the Crown for every cubic metre of timber harvested. A market-based pricing system is used by the MNR to calculate the stumpage fees that companies and individuals pay for harvesting timber from Crown land. In times of strong market prices for forest products, the stumpage system triggers higher fees. In poor markets, harvesters pay lower fees. The Crown's stumpage fees have four components:

- A minimum charge per cubic metre of harvested timber, regardless of the species, goes to the Consolidated Revenue Fund of the province. This charge is adjusted annually. Table 2e shows the minimum charge for the last five years.
- A forest renewal levy to provide dedicated funding for forest renewal. This charge varies depending upon the tree species and its anticipated renewal cost. Forest renewal charges are held in either a Forest Renewal Trust Fund or a Forest Renewal Special Purpose Account and can only be used for regenerating and maintaining the health of Ontario's forests.
- A residual value charge, paid to the province's Consolidated Revenue Fund. This charge varies from zero in times of low forest product prices, to about $23 per cubic metre when product prices are high, depending on species and product sector.
- A Forestry Futures Trust charge is also applied; this charge is $0.48 per cubic metre of timber harvested. The Forestry Futures Trust is overseen by the Forestry Futures Trust Committee, an independent committee appointed by the MNR. It funds projects that meet MNR-approved criteria. To qualify, projects must be: a silvicultural activity on Crown land that addresses renewal of trees killed or damaged by fire; renewal of land where a licensee becomes insolvent; forest protection from insect or disease infestation; intensive stand management related to a critical wood supply; or, expenditures for Independent Forest Audits, Forest Resource Inventories, or conversion charges. Conversion charges are used to assist with costs associated with the establishment of an SFL.

Summary of the Stumpage System - 2007/08

- The minimum stumpage charge ranged from $0.59 to $3.80 per cubic metre (table 2e);
- In the 2007/08, the MNR redirected $1.04 per cubic metre from the minimum charge into the Forestry Futures Trust to raise $10 million which was used to fund Forest Resource Inventory work. Once the $10 million was raised the $1.04 was added back to the minimum rate making it $3.80 per cubic metre.
- Table 2f lists the payments by the forest industry to the various government accounts.

Table 2e - Minimum stumpage charge per cubic metre

Fiscal Year	Minimum Charge
2003/04	$3.48
2004/05	$3.60
2005/06	$1.36*
2006/07	$3.34
2007/08	$0.59 - $3.80**

** In 2005, a retroactive stumpage adjustment in the amount of $70,000,000 was made for all wood invoiced in 2005/2006 fiscal year. This adjustment accounts for the lower minimum charge value for wood harvested during the 2005/2006 period*

*** In 2007/08 the MNR reduced the minimum charge to $0.59 for certain unutilized species in an effort to increase their harvest levels and use as a fibre source.*

Table 2f - Crown charge payments by the forest industry

Year	Forestry Futures Trust	Consolidated Revenue Fund	Forest Renewal Trust	Forest Renewal SPA	Total Payments
2003/04	$10,301,366	$104,492,746	$69,092,327	$1,391,232	$185,277,671
2004/05	$11,726,196	$113,707,893	$84,379,204	$140,943	$209,954,236
2005/06	$12,723,888	$32,974,166	$44,682,680	$1,092,661	$91,473,395
2006/07	$13,432,025	$60,213,322	$57,754,954	$979,275	$132,379,576
2007/08	$21,832,131[a]	$38,491,464	$69,317,150	$229,192	$129,869,937

[a] *Reflects revenue brought in for Forest Resource Inventory work*

Note: Funds in the Forest Renewal Trust, the Forest Renewal Special Purpose Account, and the Forestry Futures Trust are not formally counted as revenue by the province, although funds in the Forest Renewal Special Purpose Account are held in the province's Consolidated Revenue Fund.

Forest Sector Competitiveness Secretariat

In response to recommendations received from the May 2005 report from the Minister's Council on Forest Sector Competitiveness, the Ministry of Natural Resources (MNR), through the Forest Sector Competitiveness Secretariat (FSCS), implemented new programs with the goal of addressing the challenges faced by the Ontario forest sector. These programs aim to provide a positive climate for investment and strengthen the industry's future through joint industry and government actions.

Loan Guarantee Program (LGP)

Announced in June of 2005, the LGP has the capacity to provide a series of loan guarantees up to a maximum of $350 million over five years. The loan guarantees will be issued to the forest industry's lenders to support and leverage new capital investment projects in:

- new value-added manufacturing;
- increased fibre use efficiencies;
- energy conservation/efficiency (where this is a primary purpose); and
- development of co-generation.

The Forest Sector Prosperity Fund (FSPF)

This program announced in September 2005 is providing a total of $150 million in conditional grants to the forest sector over three years. The funding grants will be issued to the forest industry to support and leverage new capital investment in projects similar to those identified under the LGP but also including:

- load management and electricity generation from biomass;
- advanced materials handling/efficiencies;
- new environmental technologies;
- associated infrastructure needs (such as hydro lines, rail lines, etc.); and
- worker training for transition to forest sector skill sets.

Summary of FSPF and LGP - 2007/08

- 9 offers for FSPF and LGP support were accepted;
- $11.5 million was provided in FSPF grants; and
- $19.3 million in loan guarantees were approved.

Ontario Wood Promotions Program

The Ontario Wood Promotions Program is a $1 million a year program that supports the development of capacity and markets for the value-added forest product industry in Ontario.

Summary of Ontario Wood Promotions Program (OWPP) - 2007/08

OWPP met its goals for 2007/08 by strategically investing in a range of measures:

- The program was able to assist four Research and Training facilities in the expansion and enhancement of their programs to train the next generation of wood workers; and
- The program supported three organizations in their efforts to further the value-added wood industry; Northern Ontario Value-Added initiative (NOVA) which promotes and assists entrepreneurs in their efforts to identify and establish new value-added opportunities; the Ontario Wood Products Export Association which provides market intelligence and represents its value-added members on the national and international stage; and the Canadian Wood Council's WoodWORKS! initiative which promotes the use of wood in construction to expand markets for value-added wood products.

Northern Pulp and Paper Electricity Transition Program

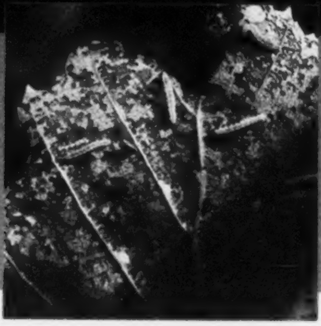
To assist forest sector companies who have been hit hard by rising electricity costs, the $140 million Northern Pulp and Paper Electricity Transition Program (NPPETP) was announced in November 2006. This three year program offers electricity rate relief to pulp and/or paper companies in Northern Ontario that use over 50,000 megawatt hours per year. Participating companies must prepare and implement an electricity transition plan designed to decrease electricity costs by a minimum 15% per unit of production within the three year term of the program thereby improving the mill's long-term cost competitiveness and viability.

Forest industry mill yard in Northern Ontario

Summary of the Northern Pulp and Paper Electricity Transition Program - 2007/08

- During 2007/08, over $34 million in electricity rate relief was provided to mills participating in this program.

3. Natural Disturbance

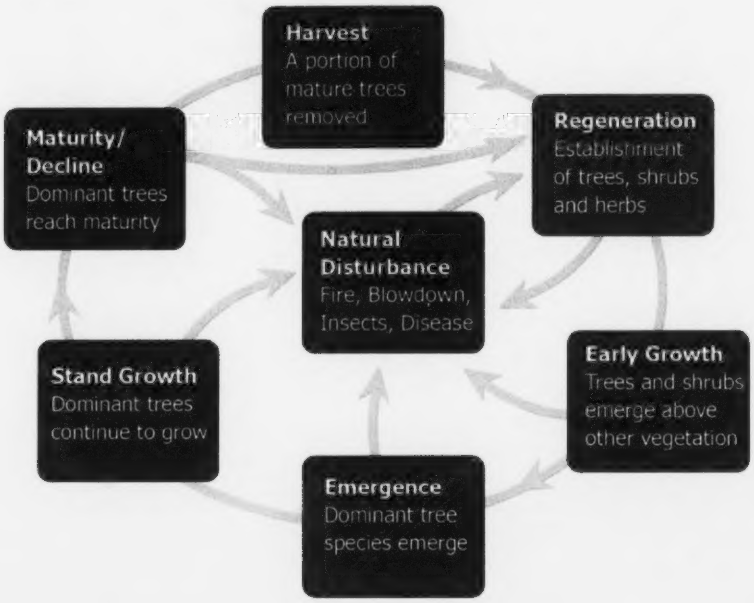


This chapter provides an overview of natural disturbances that occurred in Ontario's forests. Natural disturbances such as forest fires, insects, diseases, and severe weather events occur throughout the life cycle of the forest, as illustrated in Figure 3a. Natural disturbances (except for diseases) are measured both by area (hectares) and volume (cubic metres) of trees killed or damaged. Losses to tree diseases are estimated by calculating an annual average volume loss for all chronic diseases. Area affected is not recorded for chronic diseases. Estimates of area affected and wood volumes lost due to insects, disease, and severe weather are based on studies completed by the forest health monitoring partnership between the Canadian Forest Service and the MNR.

All estimates of disturbance area, both for the province and for the Area of the Undertaking (AOU), encompass all forest lands including Crown forests, federal and private forest lands, and federal and provincial parks. Estimates for AOU disturbance volume, however, are based on Crown production forest lands only. Depending on the severity of damage to trees from these disturbances, it is often possible to conduct salvage operations in disturbed areas to harvest timber and reduce economic losses and the threat of forest fires. These operations are reported as harvesting, and discussed in Chapter 4.

Forest inventory descriptions are changed when stands are impacted by disturbance. However, the degree of disturbance impact required before the inventory description is changed is a subjective decision. The most significant disturbances are reported in the fall of the year following a disturbance.

Figure 3a – The forest life cycle


Harvest
A portion of mature trees removed
Regeneration
Establishment of trees, shrubs and herbs
Early Growth
Trees and shrubs emerge above other vegetation
Emergence
Dominant tree species emerge
Stand Growth
Dominant trees continue to grow
Maturity/ Decline
Dominant trees reach maturity
Natural Disturbance
Fire, Blowdown, Insects, Disease

Forest Fires

The MNR records the area and volume disturbed by forest fires across all the forested area of Ontario. The number and size of forest fires varies dramatically year to year, depending on the weather. This variability is illustrated in Figure 3b, where the last five years of provincial fire disturbance is shown (as well as the average from the previous 10-year period).

Severe Weather

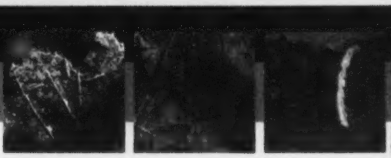
Windstorm damage (commonly referred to as "blowdown"), drought, and cold weather damage (ice/snow/ severe cold) are the most common weather related occurrences causing significant tree mortality and volume losses. Windstorms of various intensities occur periodically throughout the province. Damage from these storms is only recorded if it is discovered and if it is of a significant magnitude.

Blowdown in Red Lake

Insect Damage

The damaged area and volume loss caused by the most destructive insects are based on estimates of forested areas where 30 percent or more of the foliage was removed. Usually, a number of years of repeated defoliation are required to kill a tree. This varies for each pest, the tree species being attacked, and other factors. Forested areas may be defoliated by more than one insect. Areas reported as defoliated may include different degrees of severity. The total area and volume loss due to mortality caused by insects for the last five years is presented in Table 3a. Growth loss due to insects is reported in Table 3b.

Jack pine budworm larvae



Diseases

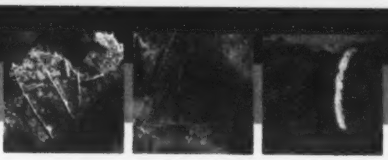
The annual changes in area and volume in a forest stand that result from natural, disease-induced mortality are not usually significant enough to be recorded for inventory update purposes. For example, chronic diseases such as root rot may kill only a few trees scattered throughout a forest stand. Therefore no area loss is recorded for most diseases. However an estimate of the volume of wood in the dead trees, and the volume of growth loss in the remaining live trees is made annually. Volume estimates of the effects of chronic disease are derived from estimates of growth and mortality losses caused by rot, stem decay, and foliage dieback. These estimated losses to disease for the last five years have been relatively stable, at somewhat less than 10 million cubic metres lost annually (Table 3c). Most of the estimated losses are in the form of tree mortality.

Calculating Volume Losses

There are two main groups of natural forest disturbances measured in Ontario, abiotic and biotic. Abiotic disturbances are those caused by non-living factors, including wildfire, drought, and severe weather such as wind, snow or hail. Biotic disturbances are those caused by living factors such as insects (forest tent caterpillars, gypsy moths, spruce budworm), or diseases (hypoxylon, root rot, or Stillwell syndrome).

Many of the insects and diseases that occur in Ontario's forests do not actually kill the trees they infest, but simply reduce the amount of growth that occurs in a spring/summer season. For example, a forest tent caterpillar infestation can reduce aspen growth by 75% in a season, and white birch by 40%. This growth loss is recorded as current annual increment volume (CAI). Many years of repeated defoliation can eventually lead to tree mortality, and this is recorded differently, as gross total volume (GTV) of wood lost.

Most abiotic disturbances like fire or blowdown cause major forest damage, and usually end up with significant tree mortality within the area of the disturbance. Each disturbance type is studied and growth loss or mortality factors are developed based on these field samples. Chronic tree diseases such as hypoxylon or root rot are not measured in area, as they are assumed to occur in all trees to some extent, so estimates by tree species and age are calculated for the entire AOU, and reported for Crown forests.



Summary of Natural Disturbance - 2007/08

- Forest fire activity was lower than 2006/07 but in line with the long term provincial average (Figure 3b);
- Jack pine budworm continued to infest large areas of the Northwest Region, between Kenora and Red Lake, and spruce budworm defoliation occurred on the Temagami and Nippissing Forests. Crown forest area disturbed and volume lost to forest insects was similar to 2006/07 (Figures 3c and 3d);
- There was a slight increase in Crown forest areas affected by drought in comparison to 2006/07 (Figure 3e); and
- Detailed summaries by MNR district are available online at www.ontario.ca/forests (search for "Forest Health Conditions in Ontario, 2007").

Figure 3b - Area disturbed by forest fire

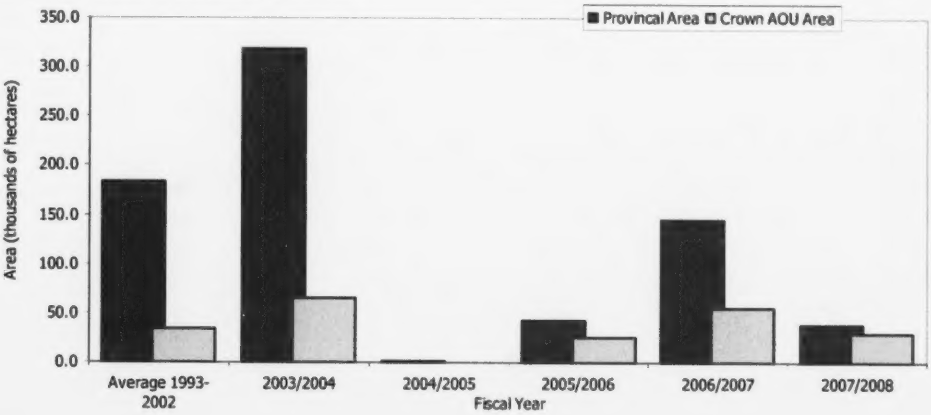
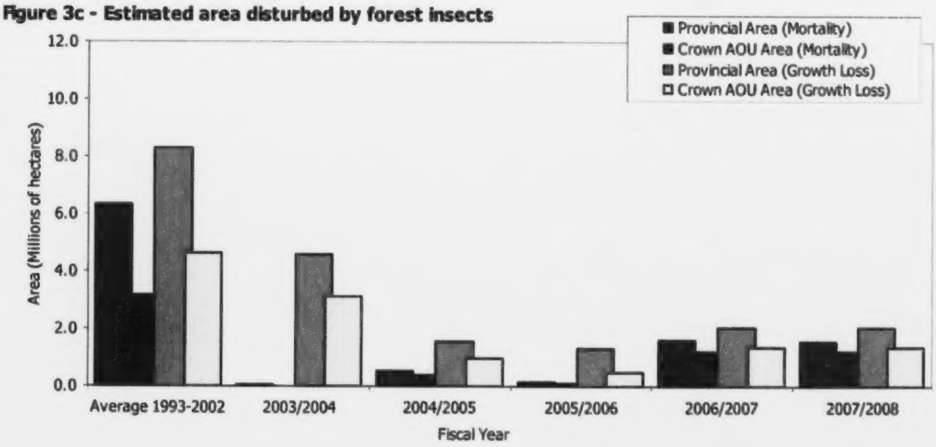


Figure 3c - Estimated area disturbed by forest insects



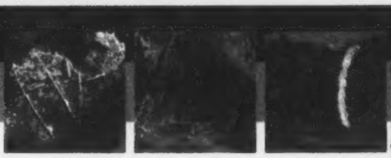


Table 3a - Estimated Losses in Area and Wood Volume Due to Mortality Caused by Natural Disturbances

Area in hectares, mortality volume in cubic metres, gross total volume (GTV)

	Average 1993-2002	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
Abiotic Damage - Area and Volume Loss -Mortality						
Fire						
Provincal Area	183,281	318,716	1,799	42,775	144,731	39,089
Crown AOU Area	34,850	65,205	640	25,165	55,702	30,279
Crown AOU Volume	3,809,918	4,699,826	5,974	3,767,975	5,849,552	3,214,957
Blowdown						
Provincal Area	18,210	2,159	107	512,803	55,731	17,924
Crown AOU Area	8,621	732	69	412,147	41,306	15,844
Crown AOU Volume	1,364,342	5,431	-	25,068,527	4,747,905	1,385,994
Weather Damage						
Provincal Area	385,449	1,138	173,015	-	-	936
Crown AOU Area	260,148	1,066	152,700	-	-	200
Crown AOU Volume	1,074,564	7,065	962,082	-	-	1,061
Drought						
Provincal Area	156,802	-	-	65,798	7,071	33,315
Crown AOU Area	90,231	-	-	13,252	6,028	1,760
Crown AOU Volume	988,258	-	-	92,178	28,047	3,869
Biotic Damage - Forest Insects - Area and Volume Loss - Mortality						
Spruce Budworm						
Provincal Area	6,277,125	-	13,848	17,112	817,434	849,052
Crown AOU Area	3,150,803	-	5,820	6,866	555,548	658,523
Crown AOU Volume	5,842,502	-	3,949	4,482	235,411	242,463
Jack Pine Budworm						
Provincal Area	43,022	4,338	856	98,306	791,888	687,715
Crown AOU Area	27,294	2,942	23	92,225	677,527	558,258
Crown AOU Volume	4,583	1,378	246	41,974	259,827	201,518
Gypsy Moth						
Provincal Area	22,548	47,617	177	1,280	10,475	33,056
Crown AOU Area	7,692	6,564	1	-	1	-
Crown AOU Volume	4,842	3,669	-	-	-	38
Poplar/Birch Complex						
Provincal Area	-	-	512,216	1,862	-	-
Crown AOU Area	-	-	383,555	1,811	-	-
Crown AOU Volume	-	-	1,780,027	9,130	-	-
Other Insects						
Provincal Area	-	1,781	5,039	4,803	5,984	1,977
Crown AOU Area	-	342	520	529	2,544	1,686
Crown AOU Volume	-	-	2,560	2,310	129,532	82,619
Total - Biotic and Abiotic Damage - Area and Volume Loss - Mortality						
Provincal Area	**7,086,439**	**375,749**	**707,057**	**744,739**	**1,833,314**	**1,663,064**
Crown AOU Area	**3,579,638**	**76,851**	**543,328**	**551,996**	**1,338,656**	**1,266,551**
Crown AOU Volume	**13,089,010**	**4,717,369**	**2,754,837**	**28,986,575**	**11,250,274**	**5,132,518**

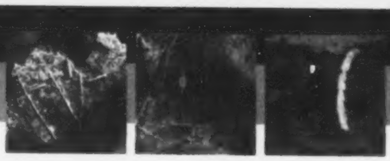


Table 3b - Estimated Growth Losses in Area and Wood Volume Due to Natural Disturbances

Area in hectares, mortality volume in cubic metres, current annual increment (CAI)

	Average 1993-2002	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
Abiotic Damage - Area and Volume Loss - Growth Loss						
Weather Damage						
Provincal Area	84,745	-	173,015	594,462	-	376,715
Crown AOU Area	37,110	-	152,700	437,776	-	267,768
Crown AOU Volume	4,719	-	-	-	-	-
Drought						
Provincal Area	1,291,157	-	-	65,798	7,071	33,315
Crown AOU Area	677,268	-	-	13,252	6,028	1,760
Crown AOU Volume	153,109	-	-	7,883	1,671	503
Biotic Damage - Forest Insects - Area and Volume Loss - Growth Loss						
Spruce Budworm						
Provincal Area	1,716,911	229,754	279,448	337,245	817,434	849,052
Crown AOU Area	903,709	132,809	156,943	205,974	555,548	658,523
Crown AOU Volume	238,932	457,200	10,422	12,991	31,392	39,148
Jack Pine Budworm						
Provincal Area	180,154	-	856	98,306	791,888	687,715
Crown AOU Area	103,105	-	23	92,225	677,527	558,258
Crown AOU Volume	17,854	-	40	5,948	52,816	47,325
Forest Tent Caterpillar						
Provincal Area	3,886,808	4,147,979	1,272,413	469,795	370,772	371,512
Crown AOU Area	2,241,757	2,970,439	829,959	183,540	126,767	125,330
Crown AOU Volume	793,398	993,256	272,905	53,234	41,237	40,994
Gypsy Moth						
Provincal Area	22,548	47,617	177	1,280	10,475	33,056
Crown AOU Area	7,692	6,564	1	-	1	-
Crown AOU Volume	119	24	-	-	-	4
Poplar/Birch Complex						
Provincal Area	2,478,373	17,364	7,814	15,236	30,374	84,588
Crown AOU Area	1,374,124	8,116	4,250	8,505	21,274	44,202
Crown AOU Volume	190,713	811	415	9,055	17,265	11,242
Other Insects						
Provincal Area	11,383	121,490	12,174	409,741	22,668	46,776
Crown AOU Area	729	1,555	2,173	15,851	-	65
Crown AOU Volume	28	-	2	-	-	-
Total - Biotic and Abiotic Damage - Area and Volume Loss - Growth Loss						
Provincal Area	**9,672,079**	**4,564,203**	**1,745,896**	**1,991,863**	**2,050,683**	**2,482,728**
Crown AOU Area	**5,345,493**	**3,119,483**	**1,146,048**	**957,124**	**1,387,145**	**1,655,906**
Crown AOU Volume	**1,398,872**	**1,451,291**	**283,784**	**89,111**	**144,381**	**139,215**

Table 3c - Estimated Wood Volume Lost to Diseases - Mortality and Growth Loss

Area in hectares, mortality volume in cubic metres (GTV), growth loss in cubic metres (CAI)

	Average 1993-2002	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
Diseases - Volume Loss - Mortality - Crown AOU Volume						
Decay	4,944,613	4,346,456	4,870,389	4,774,892	4,867,600	4,872,468
Root Rot	4,025,386	3,503,441	3,159,060	3,097,117	3,141,138	3,144,279
Dieback	1,525,146	1,372,894	1,568,196	1,537,447	1,575,207	1,672,579
Other Diseases	171,153	-	6,258	-	12,008	-
Total	**10,666,299**	**9,222,791**	**9,603,903**	**9,409,456**	**9,595,952**	**9,689,325**
Diseases - Volume Loss - Growth Loss - Crown AOU Volume						
Root Rot	271,994	221,553	222,064	217,710	214,409	214,624
Hypoxylon	2,023,658	1,785,710	1,702,945	1,702,247	1,695,372	1,696,067
Aspen Decline	31,945	128,435	76,838	-	-	-
Total	**2,327,597**	**2,135,698**	**2,001,847**	**1,919,957**	**1,909,781**	**1,910,691**

Figure 3d - Estimated Crown AOU volume lost to forest insects

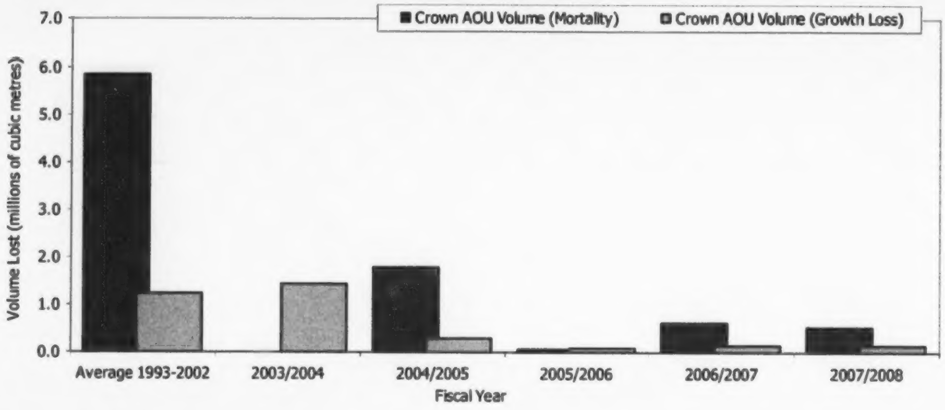
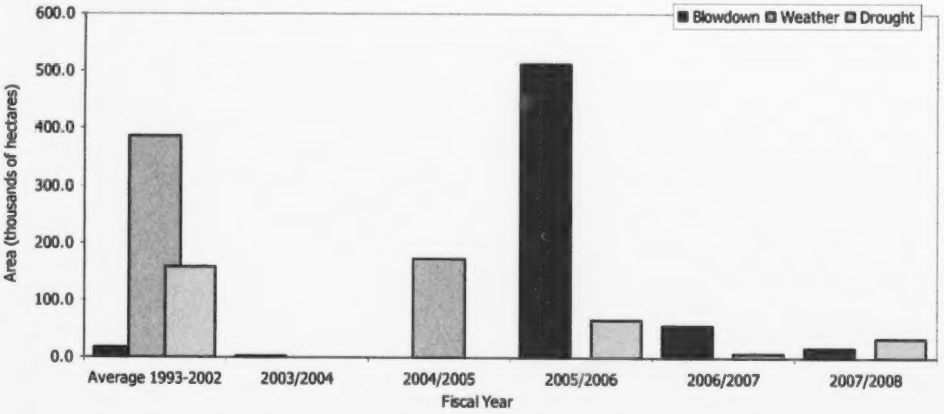


Figure 3e - Area affected by severe weather



4. Forest Harvest

This chapter reports on the level of forest harvesting activities in Ontario. Forest managers are required to report the area and volume harvested on Ontario's Crown forests each year. Harvesting that takes place on private land is not reported in this chapter.

Ontario's forests are harvested in a sustainable manner; harvesting in each forest management unit is regulated and monitored according to an approved Forest Management Plan (FMP). The MNR requires that the allowable harvest for a management unit be set at a level that will sustain a healthy forest over time. The Forest Management Plan specifies both the allowable harvest area and the associated harvest volumes. However, in Ontario the regulation of allowable harvest is based on the area, not volume.

The majority of harvesting activities on Ontario's Crown forest takes place in the Boreal and the Great Lakes-St. Lawrence Forest Regions, within the Area of the Undertaking.

Silviculture Systems Used in Ontario

Harvesting in Ontario is one of a series of actions that when combined with other actions of forest renewal and maintenance activities (e.g., tending, protection), represent a silviculture system. These systems are classified according to the method of harvesting. Ontario uses three silviculture systems: selection, shelterwood, and clearcut. The different silviculture systems are used to optimize the regeneration of the forest. The silviculture system chosen is based on the characteristics of the current forest stand as well as the desired future forest condition.

Selection Silviculture System

In the selection system, mature, unhealthy or undesirable trees in a forested stand are individually harvested (or in small groups) on a cutting cycle that ranges from 10 to 40 years. This method produces stands with trees of different ages, and is referred to as uneven-aged management. The selection silviculture system is mainly used in stands of shade tolerant hardwoods (e.g. maple, oak, and beech). The trees left behind provide the necessary shade for the regenerating forest below. The selection silviculture system is mainly used in the Great Lakes-St. Lawrence Forest Region.

Selection harvest in maple forest

Shelterwood Silviculture System

In the shelterwood system, mature trees are harvested in a series of two or more cuts to encourage natural regeneration and growth under or next to the residual trees. This is done by cutting trees uniformly over the stand area or in groups or narrow strips. Stands with trees approximately the same age are produced with this system, and is referred to as even-aged management. The shelterwood system is used in both the Boreal and Great Lakes-St. Lawrence Forest Regions and is mainly applied to forest stands of white and red pine as well as tolerant hardwoods.

Shelterwood harvest in white pine forest

Clearcut Silviculture System

Forest harvesting under the clearcut system is usually completed in one operation. Individual trees within the harvest area and/or parts of forest stands are retained for silvicultural reasons (e.g., seed trees) or to provide protection for forest values (e.g., marten habitat and cavity dwelling birds). Regeneration methods used can be natural, assisted (e.g., planting or seeding) or a combination of both methods.

Clearcut harvest in black spruce and jack pine forest

This method is also an even-aged system, with the majority of the regenerating trees being the same age. The clearcut system is mainly used in areas where tree species (e.g. jack pine, black and white spruce, poplar and white birch) are adapted to regenerating after natural disturbances, such as wildfires. Currently, in Ontario, clearcut practices are designed to emulate these natural disturbances.

Natural Disturbance Pattern Emulation

With the publication of the *Forest Management Guide for Natural Disturbance Pattern Emulation* (NDPE guide) in 2001, Ontario has been changing its forest practices so that forest biodiversity and natural processes are more proactively maintained. This is accomplished in part by emulating as closely as possible the landscape patterns produced by forest fires (e.g. variation in size and shape). This pattern of harvesting is generally referred to as Natural Disturbance Pattern Emulation and is most notably being implemented as part of the clearcut silviculture system in the Boreal forest.

NDPE Guide harvest block in Sioux Lookout

While forest harvesting cannot precisely duplicate natural disturbances in the forest, the NDPE guide promotes timber harvesting practices that emulate the natural range and pattern of fire disturbances (both small and large). This variation in harvest pattern creates desirable habitat for various wildlife species. Smaller disturbances favour the creation of habitat for species such as moose, black bear and ruffed grouse, because this size of disturbance creates a lot of "edge" (where different forest types, features, or age classes come together). Larger disturbances, over time, create habitat for species which prefer large,

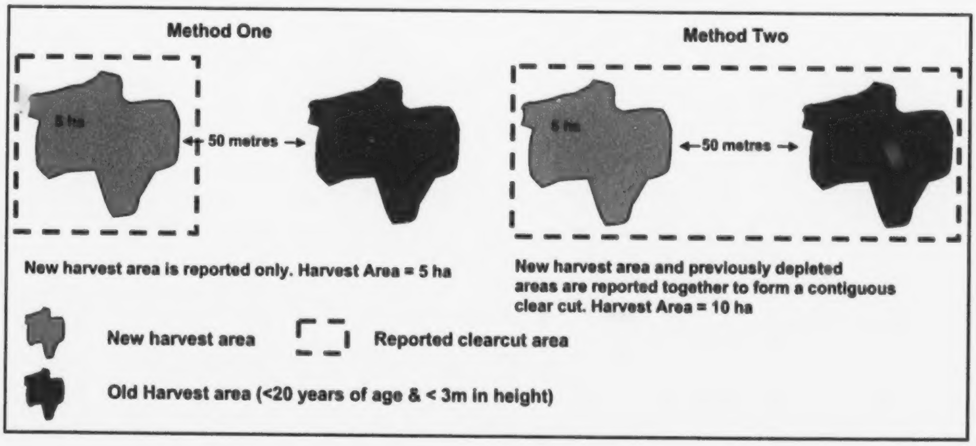
uniform forests, such as the American marten, the woodland caribou, and the great grey owl. Wildlife species have evolved in forest patterns that have largely been shaped by wildfire. Therefore the widest possible range of wildlife species will benefit by emulating the broadest range of natural disturbance patterns.

The NDPE guide also includes a standard that calls for 80% of the number of planned clearcuts in the Boreal Forest Region, and 90% of the number of planned clearcuts in the Great Lakes-St. Lawrence Forest Region, to be less than 260 hectares in size. In addition the guide gives direction on measuring the size of contiguous clearcuts, including requirements for temporal and spatial separation. Generally, an adjacent clearcut is considered contiguous if there is less than 200 metres of forested area separating it from the next clearcut. Also, if an adjacent clearcut is over 3 metres tall or 20 years old it is not considered part of the clearcut. When planned clearcuts exceed 260 hectares, each clearcut larger than 260 hectares is to be recorded in the FMP with an accompanying silvicultural or biological rationale.

Summary of Clearcut Size – 2007/08

Condition 32 (b) of the EA Declaration Order requires a summary of the size and frequency parameters of clearcuts for both the Boreal and Great lakes-St. Lawrence Forests. In the past, area statistics for average and maximum size clearcuts often referred to the area cut in a particular year, without consideration of harvests in previous years or nearby clearcuts. There are two methods in which average clearcut sizes are reported (Figure 4a). The first method reports only on the average clear cut size for the current (or new) harvest area for that year.

Figure 4a – Common Methods to Report Average Clearcut Sizes.



New harvest area is reported only. Harvest Area = 5 ha

New harvest area and previously depleted areas are reported together to form a contiguous clear cut. Harvest Area = 10 ha

The second method includes all harvest areas planned within the current FMP that have been harvested to date. This method also includes previously depleted adjacent harvest areas not meeting height and separation requirements specified in the NDPE guide.

Boreal Forest - Using the first method of reporting average clearcut sizes for areas harvested in 2007/08, thirty eight management units in the Boreal forest region had average clearcut sizes ranging from 38 to 831 hectares and maximum clearcut sizes ranging from 38 to 3,666 hectares;

Using the second method of reporting average clearcut sizes when adjacent cut blocks are considered, the average clearcut sizes ranged from 20 to 1,472 hectares. It should be noted that the average clearcut size for one forest is reduced (ie. compared to the current year average of 38) due to the specific sizes and limited number of clearcuts on the forest. Maximum clearcut sizes reported ranged from 38 to 25,536 hectares.

Great Lakes-St. Lawrence Forest- In the Great Lakes-St. Lawrence Forest, the primary stand replacing natural disturbance agents have been wind and fire events. Through an ecosystem management approach to landscape level management, forest managers attempt to address the habitat requirements of many wildlife species. The specific habitat requirements of selected species are also considered. Some species, such as pileated woodpecker, are area sensitive and need large blocks of forest. Other species such as white tailed deer prefer small patches and an abundance of edge habitat. To provide for a diversity of habitat needs when planning for forest harvest, a variety of harvest area sizes must be employed.

In 2007/08, nine management units in the Great Lakes-St. Lawrence Forest reported average clearcut sizes ranging from 10 to 98 hectares and maximum clearcut sizes ranging from 47 to 454 hectares using method 1. In the Great Lakes-St. Lawrence Forest clearcutting is not used as frequently as it is in the Boreal forest. However, clearcuts are sometimes created that are adjacent to other recent clearcuts. When adjacency is taken into account, using method 2, the clearcut statistics are as follows: average clearcut sizes ranged from 13 to 229 hectares. Maximum clearcut sizes ranged from 60 to 3,036 hectares.

Summary of Harvest Area – 2007/08

- Total area harvested on Crown land was 158,478 hectares, most of which was harvested under the clearcut silvicultural system (Figure 4b and 4c);
- Market conditions in the forest industry have contributed to a significant drop in the area harvested over the last 2 years, whereas area disturbed by natural causes has increased (Figure 4d);
- 87% of Forest Management Plans in 2007/08 were required to fully implement the *Forest Management Guide for Natural Disturbance Pattern Emulation* (NDPE guide 2001) for even-aged managed stands. The remaining Forest Management Plans were still required to implement the stand level standards and guidelines outlined in the guide;
- There were 8,210 hectares of naturally disturbed area salvaged;
- In the Boreal forest region there were a total of 1,085 clearcuts reported and 976 (90%) were less than 260 hectares in size; and
- In the Great Lakes-St. Lawrence Forest there were a total of 209 clearcuts reported and 206 (99%) were less than 260 hectares in size.

Figure 4b - Area Harvested by Silvicultural System

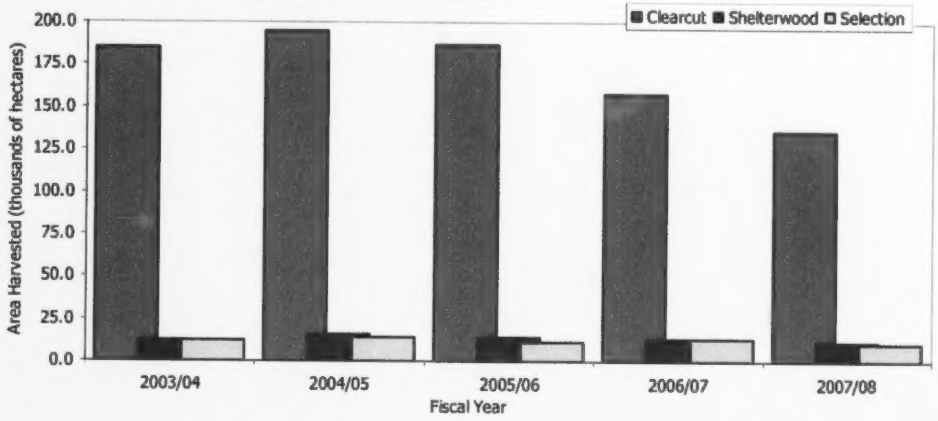


Figure 4c - Area Harvested by Year and MNR Region

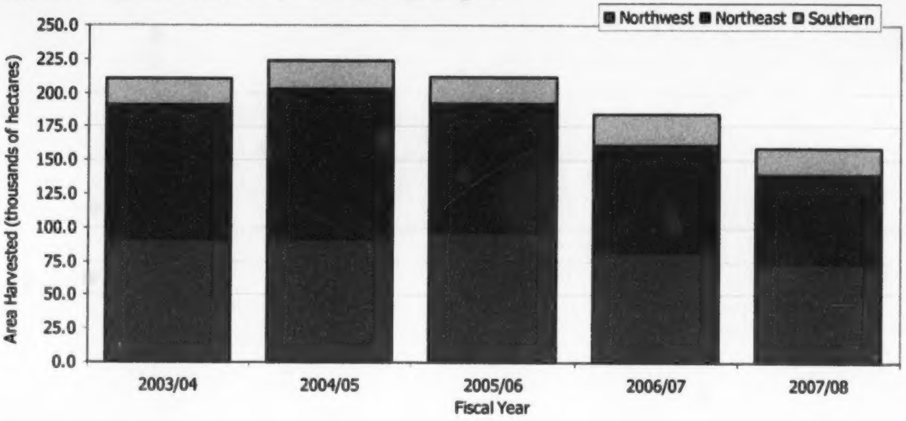
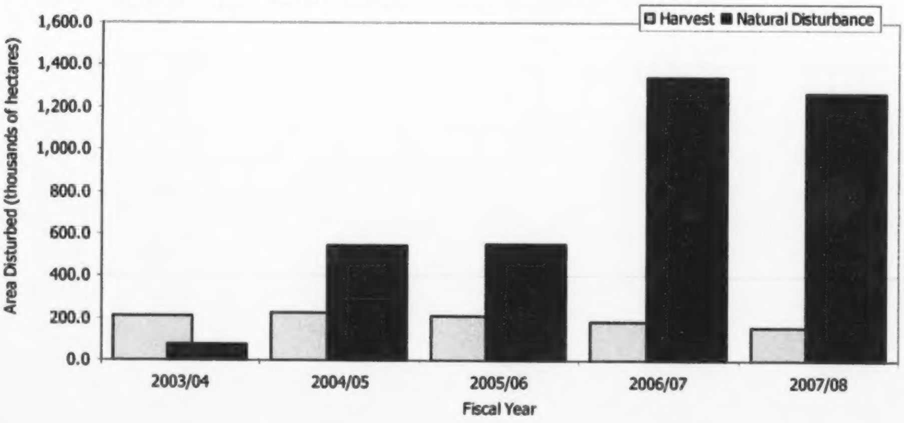


Figure 4d - Forest Area Disturbed by harvest and natural causes within the AOU



Summary of Harvest Volume - 2007/08

- Harvest volumes reported have dropped significantly over the last 2 years (Table 4a); this is due to the overall reduced area being harvested as a result of the downturn in the forest industry;
- 15.98 million cubic metres of wood was harvested on Crown land with the majority being softwood volume (Figure 4e and 4f);
- The total volume harvested in the AOU is comparable to the total mortality volume (14.82 million) caused by insect, disease, severe weather and fire combined (Figure 4g); and
- In general, not taking into account site productivity and silvicultural system, the 2007/08 average volume harvested was 100.9 cubic metres/hectare.

Figure 4e - Hardwood and softwood volumes harvested on Crown land

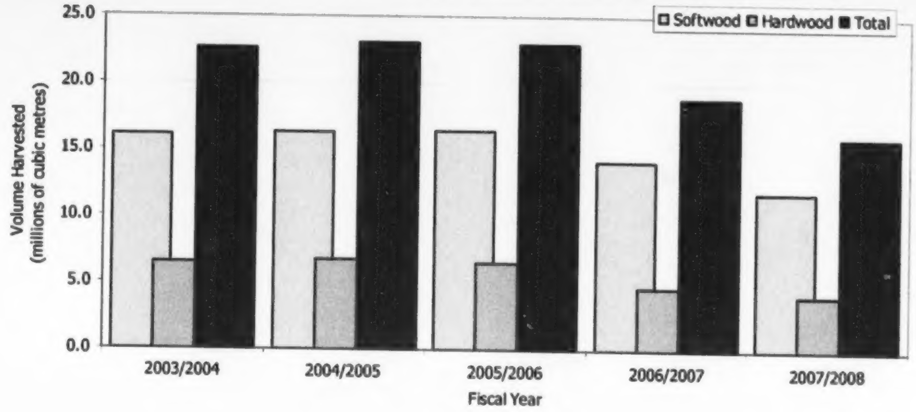


Figure 4f - 2007/08 Wood Volume Harvested by MNR Region and Species Group

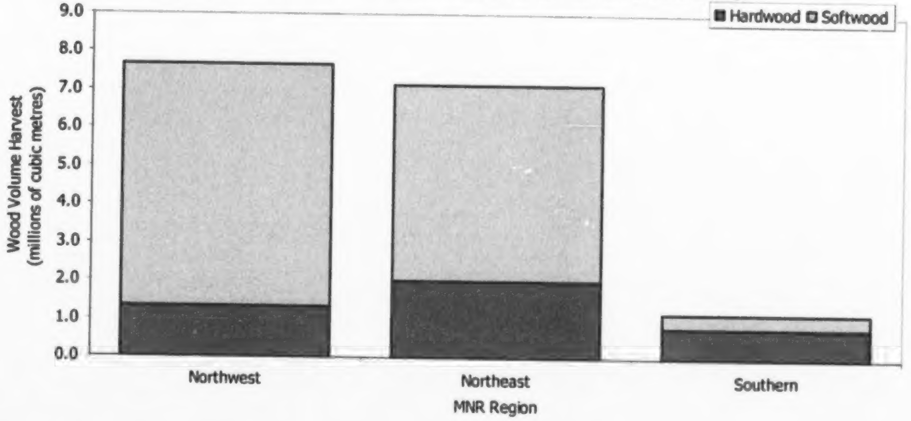


Figure 4g - AOU Wood Volume for Harvest and Natural Disturbances

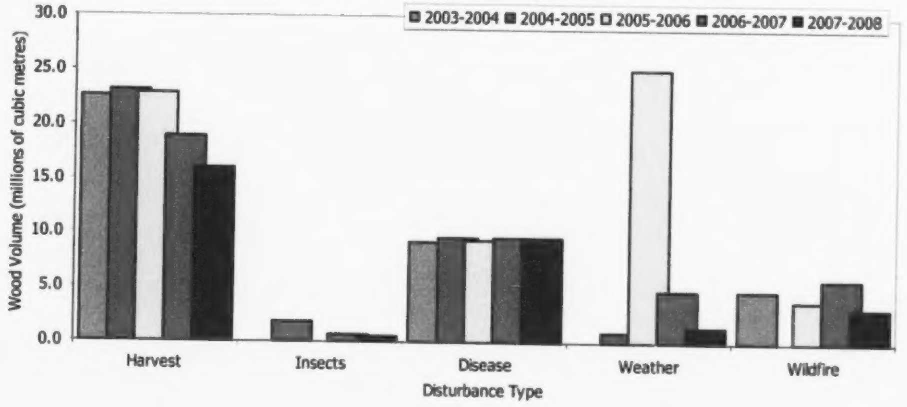


Table 4a - Harvest volume by species (cubic metres)

Softwood Species	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
White Pine	463,810	613,956	474,235	575,262	384,924
Red Pine	242,215	258,927	225,136	252,291	178,003
Jack Pine	5,732,330	5,055,635	5,427,173	4,652,104	4,173,190
Spruce	9,071,354	9,816,359	9,597,239	8,190,782	6,469,409
Hemlock	23,786	29,125	25,456	33,677	26,529
Balsam Fir	469,154	484,247	536,170	418,951	443,570
Cedar	17,633	43,049	65,686	12,860	29,607
Larch	31,770	39,292	58,606	21,102	38,629
Other Softwood	7	3,671	12,577	25,833	99,840
Total Softwoods	**16,052,059**	**16,344,261**	**16,422,278**	**14,182,863**	**11,843,702**

Hardwood Species	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
Maple	628,950	657,331	664,641	699,423	620,827
Yellow Birch	49,783	64,646	64,581	51,451	42,708
White Birch	665,812	686,379	823,240	543,946	544,213
Oak	39,656	39,918	45,412	37,655	36,842
Beech	41,385	43,788	47,765	49,563	42,688
Poplar	5,111,494	5,217,834	4,802,473	3,270,796	2,800,039
Basswood	13,903	12,786	15,194	13,451	14,450
Ash	3,822	5,099	6,295	7,211	5,864
Other Hardwood	2,104	4,230	5,749	13,371	32,618
Total Hardwoods	**6,556,910**	**6,732,010**	**6,475,350**	**4,686,867**	**4,140,248**
Provincial Total	**22,608,969**	**23,076,271**	**22,897,629**	**18,869,730**	**15,983,950**

5. Forest Renewal

The Crown Forest Sustainability Act (CFSA) requires forest managers to carry out renewal activities on harvested areas to provide for the sustainability of Crown forests. Forest maintenance operations are also required and conducted on Ontario's Crown forests. These operations include tending carried out to improve the survival, growth, or quality of a regenerating forest, and protection operations carried out to manage or prevent the damage caused by forest insects and diseases.

Forest Renewal and Tending Activities

Forest renewal follows disturbance in the life cycle of a forest. Whether a forest is disturbed by natural means (fire, insect, severe weather event) or through harvest activities, a new forest begins to develop almost immediately following the disturbance event. Forest renewal may occur through natural means or through various methods of assisting the renewal process (planting or seeding). Forest renewal includes a variety of activities that can take place in various combinations. Activities needed to ensure the successful regeneration of all harvested areas are specified in all approved FMPs in Ontario. The activities undertaken for the purposes of forest renewal are reported annually.

Planting and seeding are the two most common types of assisted regeneration. Seeding may be carried out directly from aircraft or by seeders on the ground. The regeneration establishment period, from harvest to completion of the planting or seeding can take up to five years.

Many tree species can re-establish themselves on a site without planting or seeding. These natural regeneration processes could include seeding from the adjacent forest or from cones left on site after the harvest (jack pine), suckering of stumps and roots (poplar), and continued growth of young trees remaining on the harvested area (black spruce).

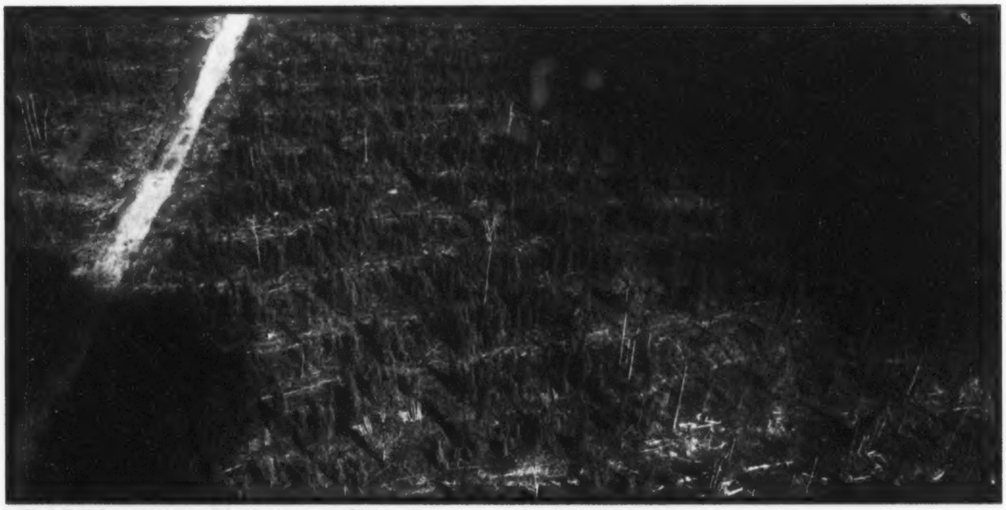
This natural regeneration can be enhanced through careful selection of the silvicultural system and harvest method.

The choice of silvicultural system or harvest method used is largely dependent on the biological requirements of the different tree species. The silvicultural systems used in Ontario are described in more detail in chapter 4 of this report.

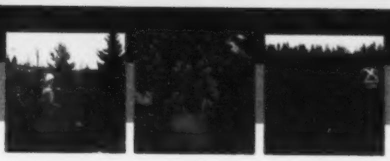
The clearcut silvicultural system is the primary system used in the Boreal Forest of the Northeast and Northwest regions, mainly in stands containing jack pine, black spruce, poplar and white birch. Natural regeneration using the clearcut harvest method under the clearcut silvicultural system can be broken down into several categories (Table 5a - Block Cut, HARP/HARO, CLAAG, Strip Cut and Seed Tree Cut).

Block cut is the removal of the stands in a single pass or one operation and leaving the renewal of the area to natural means.

CLAAG (careful logging around advanced regeneration) is an operational practice that can be applied with any harvest method under the clearcut silvicultural system. The objective for this method is to remove the overstory and retain or protect the understorey to facilitate natural regeneration.



CLAGG harvest on black spruce forest



HARP or HARO (harvest and regeneration program/option) is an operation practice that occurs in uneven-aged lowland black spruce ecosystems. The objective of this method is to remove the dominant canopy and retain trees below a set diameter limit; this will leave a significant component of the overstorey intact for natural regeneration of the future stand.

A strip cut involves the removal of the stand in progressive strips or blocks in more than one operation. The strip cut method is prescribed to encourage natural regeneration, provide wildlife habitat, protect fragile sites or for aesthetic reasons.

A seed tree cut involves the removal of all commercial trees from an area, except for a small number of seed bearing trees left singly or in small groups for regeneration purposes. The seed tree method is used primarily in white pine and red pine stands in the Northwest and Northeast regions.

Natural regeneration using the shelterwood silvicultural system occurs mainly in white pine and tolerant hardwood stands in the Northeast and Southern regions.

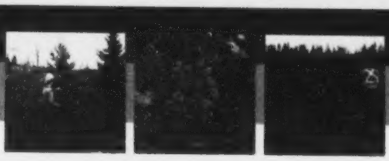
Natural regeneration under the uneven-aged selection silvicultural system is carried out in tolerant hardwood stands mainly found in the Great Lakes - St. Lawrence forest region. In cases where planned natural regeneration is not successful, forest managers may apply assisted regeneration methods later on (e.g. planting or seeding).

Assisted regeneration efforts generally promote the renewal of a disturbed area by either seeding or planting the area. In an effort to increase the success of the regeneration effort, a site preparation treatment is often completed prior to the seeding or planting operation. Site preparation is done to provide suitable soil conditions that will promote seed germination and the subsequent development of a seedling, or will promote the establishment and development of a planted seedling. Site preparation can be accomplished through mechanical or chemical means, or by prescribed burning. Regeneration levels tend to follow fluctuations in harvest levels and, to a lesser degree, forest depletions from natural disturbances such as forest fires and insect epidemics.

Further treatments may be employed to assist the trees in the developing forest stand to get established. Those treatments are generally referred to as tending activities and include the operations of weeding, cleaning, thinning, spacing and stand improvement. Forest tending operations are carried out to improve the survival, growth, or quality of a regenerating forest. Tending may be done in young stands to help achieve a successful result in establishing a desired forest or may be conducted in uneven-aged stands to maintain the desired age-class distribution and volume.

An assessment of regeneration success is also a requirement of the renewal process. The assessment refers to Free-To-Grow as an indication that the regeneration effort has been declared a success. Tables 5a, 5b and figures 5a through 5i, in this section of chapter 5 provide a summary of provincial renewal operations conducted on forest management units across Ontario.

Regeneration survey



Summary of Forest Renewal and Tending Activities - 2007/08

- The economic downturn in the forest industry has resulted in decreased harvest levels which in turn has lead to a reduction in forest renewal levels such as planting, seeding, site preparation and chemical tending;
- Total regeneration efforts are slightly lower than the 5 year average but the level of regeneration (natural and assisted) is consistent with the level of harvest;
- Most of the areas regenerated by natural or artificial methods were harvested using the clearcut silvicultural system;
- Assisted regeneration techniques using seeding have increased, while assisted regeneration techniques relying on planting have decreased relative to previous years;
- Tree planting continued to be the main method of assisted regeneration. Natural regeneration was the preferred option to renew areas affected by natural disturbances (e.g. fire, insect, weather events);
- Mechanical site preparation was below the 5 year average for the second year in a row. The decreasing level of mechanical site preparation gives an indication that planting and seeding effort in future years could decrease; and
- There was one small prescribed burn conducted for site preparation purposes.

Table 5a - Provincial Renewal Operations

All units are area in hectares unless otherwise stated

Regeneration Method	2003/04	2004/05	2005/06	2006/07	2007/08	5 Year Average
Natural Regeneration						
Clearcut Silvicultural System						
Block Cut	50,076	56,682	107,073	73,911	63,649	70,278
HARP/HARO/CLAGG	14,039	748	14,823	14,288	11,611	11,102
Strip Cut	31	0	31	2	0	13
Seed Tree Cut	4,121	1,929	1,233	1,164	901	1,870
Shelterwood System	9,635	6,543	6,766	8,450	7,093	7,697
Selection System (uneven-aged)	10,968	8,276	11,715	12,323	10,040	10,664
Subtotal Natural Regeneration	**88,870**	**74,178**	**141,641**	**110,138**	**93,294**	**101,624**
Assisted Regeneration						
Planting	84,499	86,487	85,187	82,538	74,725	82,687
Trees (000's planted)	123,444	127,701	126,708	119,138	109,161	121,230
Seeding						
Direct	38,151	16,636	15,116	17,945	32,488	24,067
With Site Preparation	4,068	2,968	2,828	1,860	591	2,463
Scarification	508	113	108	224	88	208
Subtotal Assisted Regeneration	**127,226**	**106,204**	**103,239**	**102,567**	**107,892**	**109,426**
Total Regeneration	**216,096**	**180,382**	**244,880**	**212,705**	**201,186**	**211,050**
Site Preparation						
Mechanical	66,014	63,298	60,087	50,455	50,153	58,001
Chemical	4,910	6,874	10,943	9,131	6,841	7,740
Prescribed Burn	2,223	0	401	0	29	531
Total Site Preparation	**73,147**	**70,172**	**71,431**	**59,586**	**57,023**	**66,272**

Table 5b - Provincial Tending Operations

TENDING (hectares)	2003/04	2004/05	2005/06	2006/07	2007/08	5 Year Average
Cleaning						
Manual	3,477	1,181	1,648	991	477	1,555
Chemical-ground	4,889	5,007	6,200	3,549	4,489	4,827
Chemical-aerial	67,323	57,604	71,762	66,301	61,217	64,841
Mechanical	2,496	0	0	0	0	499
Subtotal Cleaning	**78,186**	**63,791**	**79,610**	**70,841**	**66,183**	**71,722**
Spacing, Precommercial Thinning, Improvement Cutting						
Even-aged	12,818	11,851	10,567	5,145	4,175	8,911
Uneven-aged	10,248	5,592	8,610	8,735	7,352	8,107
Precommercial Thinning, Improvement Cutting	**23,066**	**17,443**	**19,177**	**13,880**	**11,528**	**17,019**
TOTAL TENDING	**101,252**	**81,235**	**98,786**	**84,721**	**77,711**	**88,741**

Figure 5a - Area of Natural Disturbance (fire and blowdown), Harvest and Regeneration

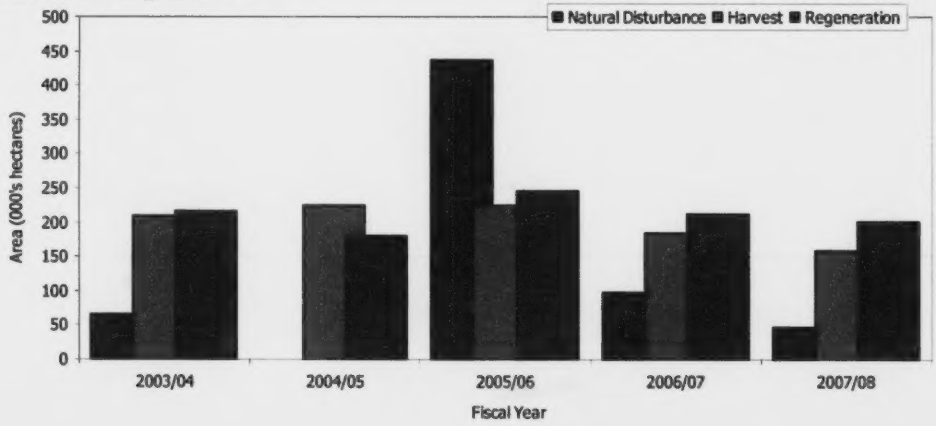
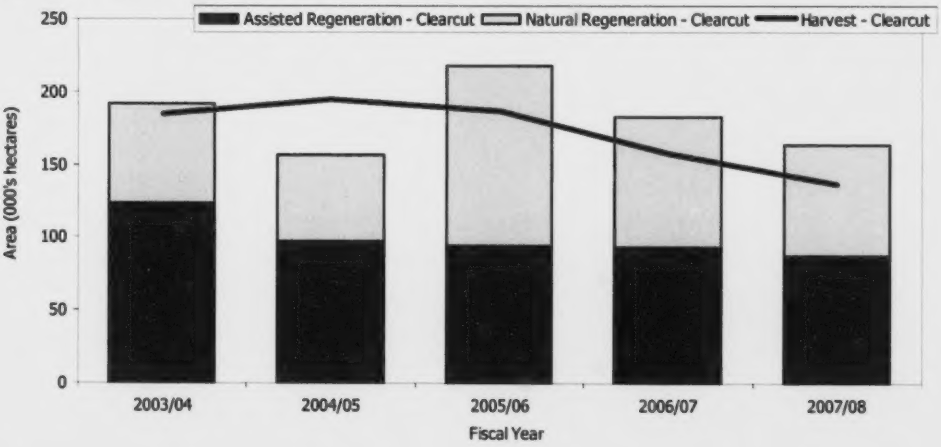


Figure 5b - Area of Regeneration - Clearcut Silvicultural System



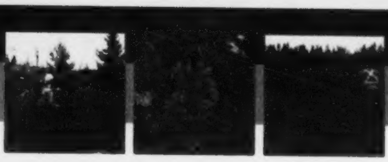


Figure 5c - Area of Regeneration - Selection Silvicultural System

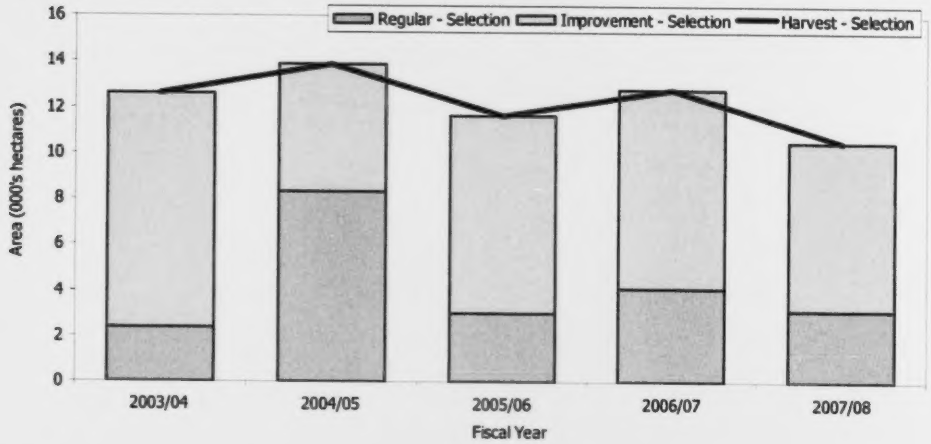


Figure 5d - Area of Regeneration - Shelterwood Silvicultural System

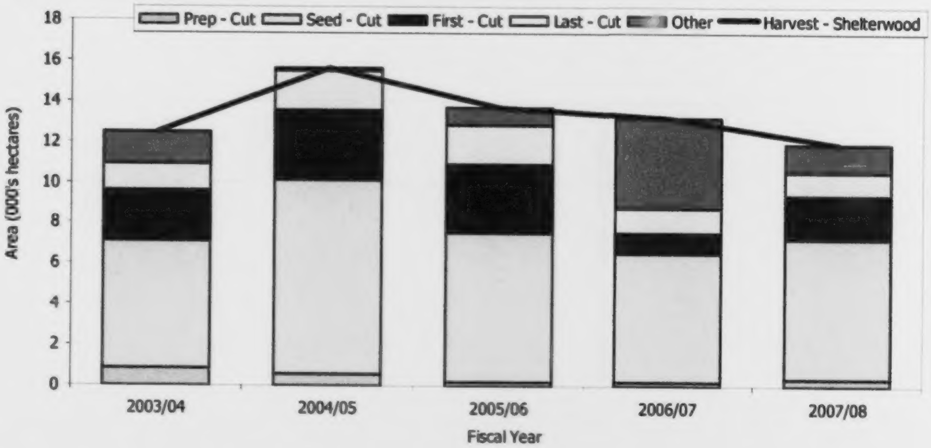
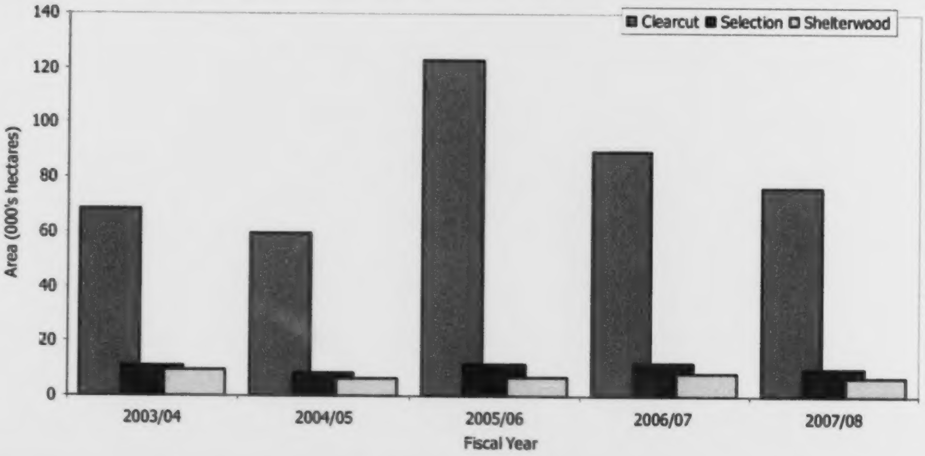


Figure 5e - Area of Natural Regeneration by Silvicultural System



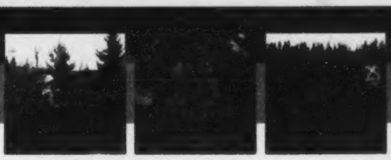


Figure 5f - Area of Planted, Seeded and Scarified Regeneration

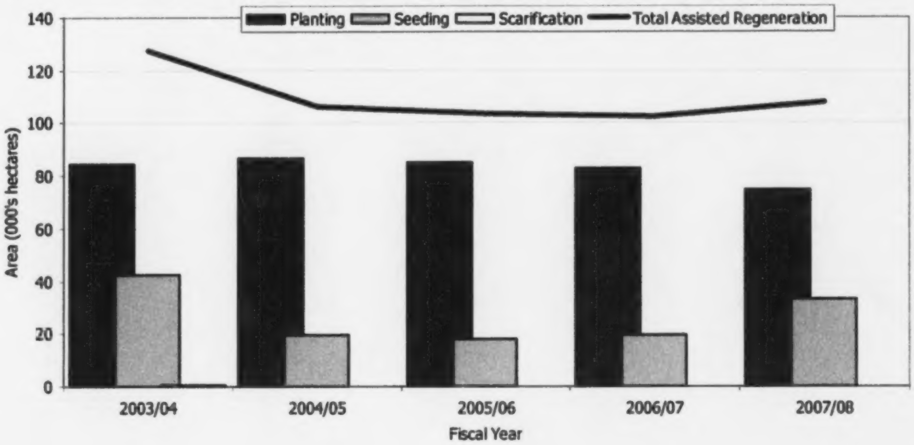


Figure 5g - Area of Site Preparation

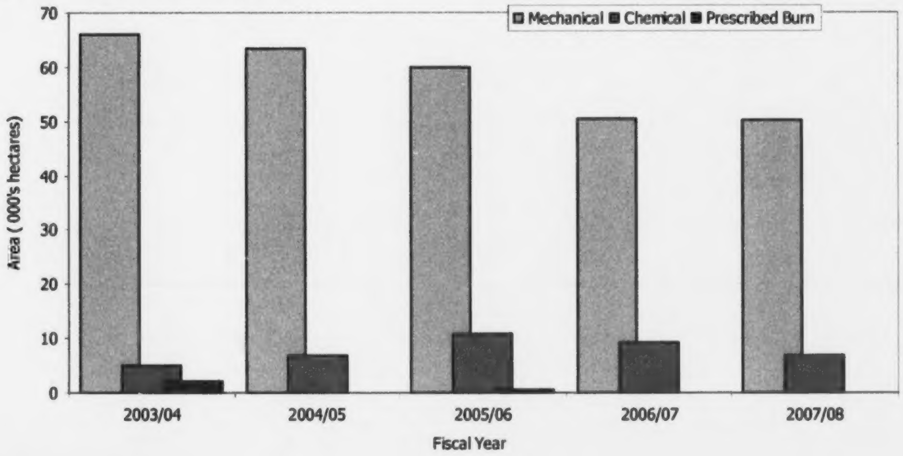


Figure 5h - Area Tended

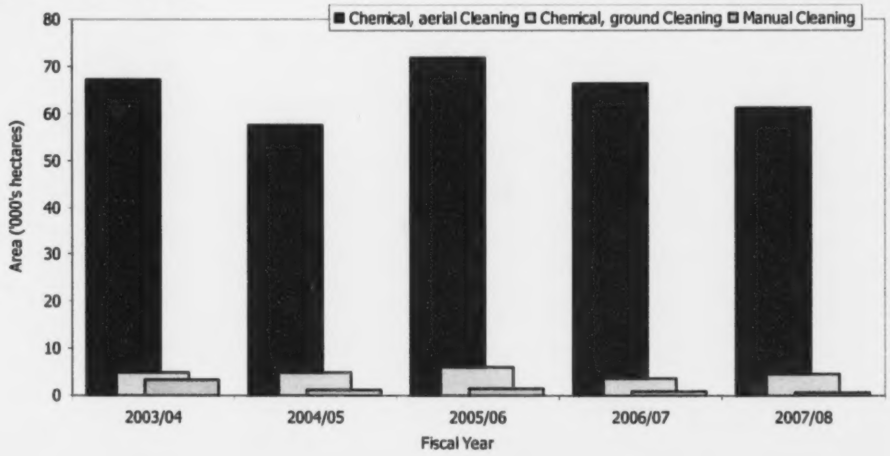
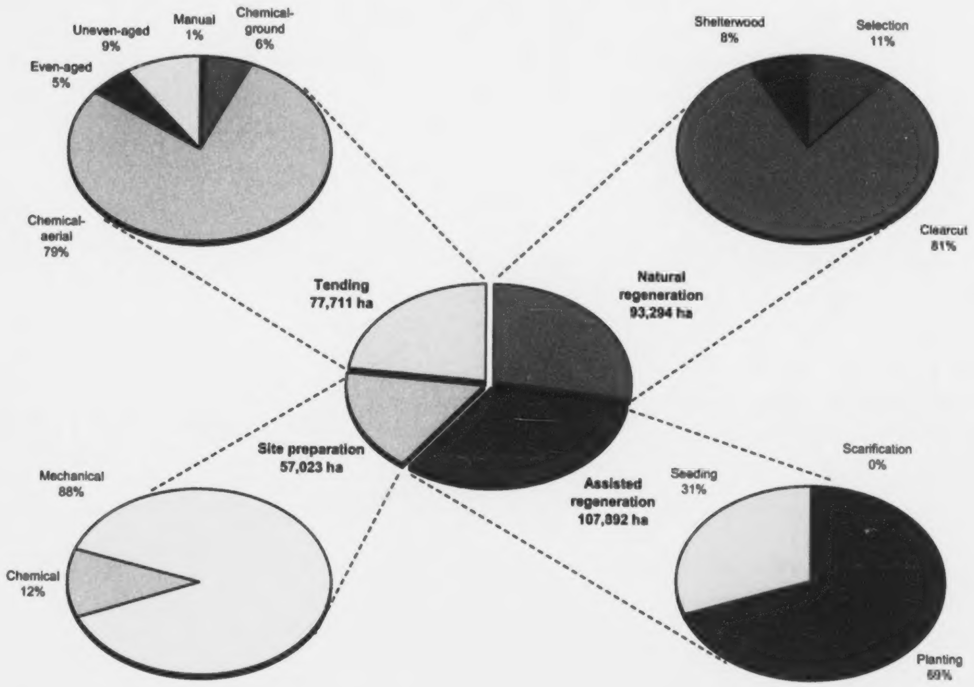


Figure 5i – Regeneration, Site Preparation and Tending 2007/2008

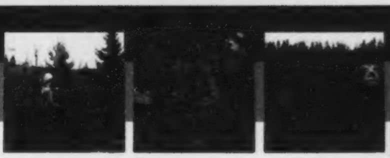


Protection

Protection operations prevent or manage the damage caused by insects and diseases.

Summary of Protection - 2007/08

- 154,940 hectares were sprayed with B.t. (Bacillus thuringiensis, a naturally occurring bacterium) to control an outbreak of jack pine budworm.



Silvicultural Effectiveness Monitoring

Harvest and renewal activities are reported annually for the year they are implemented. Determination of the success of these activities in regenerating the forest occurs by specific assessment methods, conducted a number of years (usually 5 to 15 years) after regeneration treatments are completed.

Free-To-Grow (FTG) assessments are an effectiveness monitoring tool that provide an indication of the success of silvicultural treatments, and information used to project the future forest condition. These assessments involve a variety of techniques, including field measurement of trees on sample areas of the forest, aerial surveys, and remote sensing. Some forest managers conduct these surveys annually, while others prefer to accumulate larger blocks that they assess once every few years. The Forest Renewal Trust Fund provides funding for these surveys on all management units.

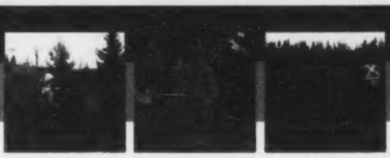
In the forest management planning process, silvicultural ground rules are developed for all forest units. Prescriptions outlined in the ground rules identify silvicultural treatment packages intended to result in a prescribed future forest unit, and also identify other future forest units that will be accepted should the prescribed result not occur.

Regenerating areas being reported in this provincial annual report were harvested and treated a number of years ago (typically 5-15 years). However, in response to independent forest audit recommendations and inventory updating processes, a number of management units are continuing to assess backlog areas which may be considerably older (for example 30 years and older). These older areas are not representative of current practices. Those areas treated prior to April 1, 1994 occurred before the implementation of the CFSA and the associated Forest Renewal Trust and Forestry Futures Trust Funds.

The Forestry Futures Trust and the Forest Renewal Trust Funds provide the funding for forest managers to ensure that harvested areas have the necessary treatments to achieve successful renewal. Forest managers may also apply for funding from the Forestry Futures Trust Fund to treat naturally depleted areas (e.g. areas depleted from forest fires).

All harvested areas must be renewed successfully to a FTG standard. Some of the areas found not FTG at this time may require re-treatment, and other areas may require tending (e.g., to suppress undesirable competing vegetation such as brush and grass). Other areas simply require the passage of more time to allow for the incremental growth necessary to meet the height standard for FTG. Renewal success rates should continue to improve in future reports because of these legislative and funding changes.

Regeneration on the Big Pic Forest



Summary of Silvicultural Effectiveness Monitoring - 2007/08

- Area assessed for FTG has increased since 2006/07 and approximates the 5 year average (Figure 5j);
- Regeneration success continues to be approximately 85% and better over the 5-year period (Table 5c); and
- Silviculture success was 68%, which is above the 5 year average (Figure 5k). The success rate is also significantly higher than that of the preceding 3 years, which ranged from 40% to 54 %. Some of the assessed areas that were reported as not achieving FTG status could be retreated in the future to achieve a silvicultural success.

Table 5c - Area Assessed for Regeneration Success

Region	2003/04	2004/05	2005/06	2006/07	2007/08	5 Year Average
Northwest Region						
Total Area Assessed	116,060	130,091	103,131	82,358	154,504	117,229
Total Area FTG	91,700	113,332	76,795	73,075	127,932	96,567
FTG Project FU	79,952	47,041	50,458	28,336	106,926	62,543
% Regeneration Success	79.0%	87.1%	74.5%	88.7%	82.8%	82.4%
% Silviculture Success (FTG target FU)	68.9%	36.2%	48.9%	34.4%	69.2%	53.4%
Northeast Region						
Total Area Assessed	130,674	130,712	147,069	99,112	80,166	117,547
Total Area FTG	116,572	115,743	133,689	91,006	73,149	106,032
FTG Project FU	109,016	53,122	81,496	43,312	51,461	67,681
% Regeneration Success	89.2%	88.5%	90.9%	91.8%	91.2%	90.2%
% Silviculture Success (FTG target FU)	83.4%	40.6%	55.4%	43.7%	64.2%	57.6%
Southern Region						
Total Area Assessed	24,510	9,870	9,521	15,159	12,086	14,229
Total Area FTG	21,417	8,491	9,358	13,544	10,848	12,731
FTG Project FU	19,492	8,052	9,140	12,899	9,446	11,806
% Regeneration Success	87.4%	86.0%	98.3%	89.3%	89.8%	89.5%
% Silviculture Success (FTG target FU)	79.5%	81.6%	96.0%	85.1%	78.2%	83.0%
Ontario Totals						
Total Area Assessed	271,244	270,673	259,721	196,629	246,756	249,005
Total Area FTG	229,689	237,565	219,842	177,625	211,930	215,330
FTG Project FU	208,460	108,215	141,094	84,547	167,833	142,030
% Regeneration Success*	84.7%	87.8%	84.6%	90.3%	85.9%	86.5%
% Silviculture Success (FTG target FU)*	76.9%	40.0%	54.3%	43.0%	68.0%	57.0%

**Note: Percentages for Regeneration and Silviculture Success are compared to total area assessed for that year. On a province wide basis, the percentage of assessed area that was declared FTG to a prescribed standard is refered to as a "silvicultural success". The percentage of areas that are approved by an acceptable alternative standard is refered to as a "regeneration success".*

FTG Measure	2003/04	2004/05	2005/06	2006/07	2007/08	5 Year
MUs Reporting	41	32	40	38	34	37
Total Number MUs	49	48	47	46	46	47
Percent Reporting	83.7%	66.7%	85.1%	82.6%	73.9%	78.4%

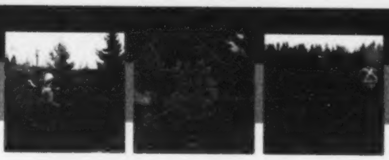


Figure 5j - Area Assessed for Regeneration Success

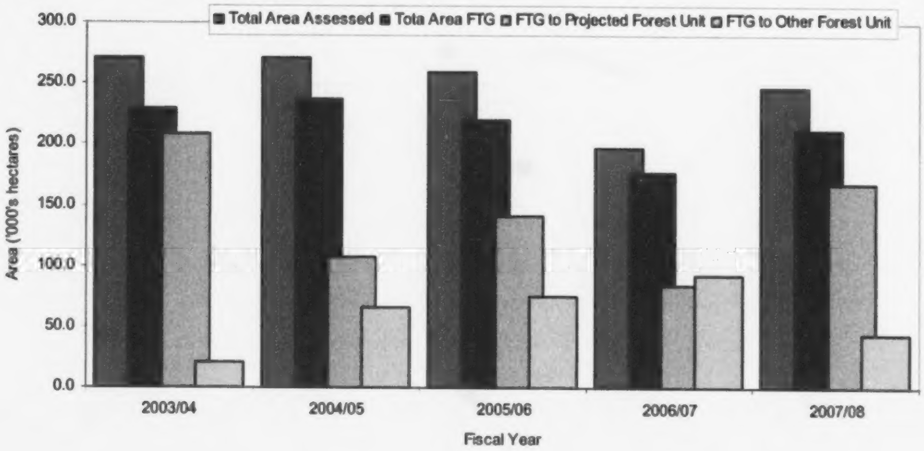
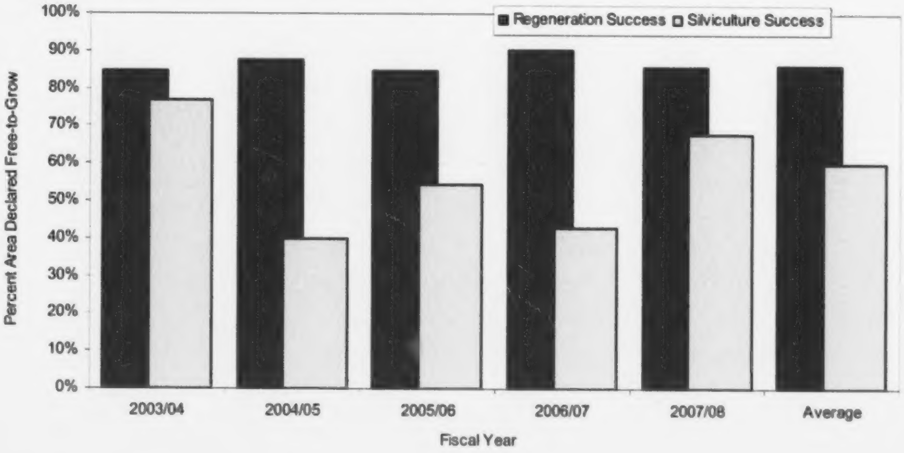
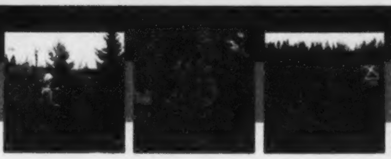


Figure 5k - Regeneration Success (percentage)





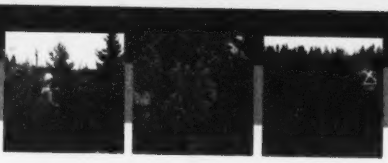
Funding for Forest Renewal and Maintenance

The financial mechanisms established under the CFSA, and as outlined in Chapter 2, ensure that there is funding available for forest renewal and maintenance. Each licensee pays an appropriate renewal charge to an account in the Forest Renewal Trust Fund, which may only be used to conduct eligible silviculture work on the management unit from which the stumpage was generated upon harvest.

Forest resource licensees, operating on management units where no SFL exists, pay renewal charges into the Forest Renewal Special Purpose account. This account provides dedicated funding for forest renewal and tending operations on the management unit. The MNR is responsible for administration of the Forest Renewal Special Purpose Account. As with the Forest Renewal Trust Fund, each management unit has its own separate account to cover forest renewal and tending costs.

Revenue for a third fund, the Forestry Futures Trust Fund, comes from a portion of the Crown charges that all licensees are required to pay. In addition, any administrative penalties assessed under the CFSA are paid into the Forestry Futures Trust Fund. In addition to these trust funds and special purpose accounts, the MNR supports forest renewal through the operation of the Ontario Tree Seed Plant and tree improvement programs.

Adjustments to renewal charges occur on individual management units to reflect the local costs of renewing and tending various species and to reduce specific accumulated surpluses in individual Renewal Trust Fund accounts. These rates will continue to be reviewed and adjusted annually to ensure that adequate levels of funding are maintained. A complete listing of the 2007/08 renewal charges for each management unit is provided in Appendix 3. Tables 5d and 5e in this section provide a summary of provincial forest renewal expenditures and trust fund contributions.



Summary of Forest Renewal and Maintenance Funding - 2007/08

- The Forest Renewal and Forestry Futures Trust Fund revenues (contributions) were greater than the trust fund expenditures for 2007/08.

Table 5d - Provincial Forest Renewal Expenditures

Source	Expenditures (million $) 2007/08
Forest Renewal Trust Fund	$66.8
Forestry Futures Trust Fund	$17.9
Special Purpose Account	$1.3
Direct MNR Expenditures	$0.2
Total Renewal Expenditures	**$86.2**

Table 5e - Trust Fund Contributions

Fund	Contributions (million $) 2007/08
Forest Renewal Trust Fund	$69.3
Forestry Futures Trust Fund	$21.8
Total Contributions	**$91.1**

6. Forest Access Roads

This chapter provides information on the construction and maintenance of all forest access roads (primary, branch and operational roads). The chapter includes details on the level of maintenance activities, including grading, snow-plowing, re-alignments, flood repairs, bridge repairs, and any other activity necessary to maintain existing roads. It also includes information on access controls established on forest roads, the decommissioning of forest roads and government funding programs for forest access roads.

Primary roads are roads that provide principal access to the management unit, and are constructed, maintained and used as the main road system on the management unit. Primary roads are normally permanent roads, although there may be significant periods of time when specific primary roads are not required for forest management purposes.

Branch roads are roads that branch off existing or new primary or branch roads, providing access to and through areas of operations on a management unit.

Operational roads are roads within areas of operations that provide short-term access for harvest, renewal and tending operations. Operational roads are normally not maintained after they are no longer required for forest management purposes, and are often site prepared and regenerated.

Roads Funding Programs

There are a number of roads funding programs available for the construction, maintenance and monitoring of forest access roads on Crown land.

Forest Access Capital Roads Program

The Forest Access Capital Roads Program is jointly funded by the Ministry of Natural Resources and the Ministry of Northern Development and Mines. This program funds access roads that are the responsibility and liability of the Crown, to maintain as multipurpose roads. Most of the road work funded by the two ministries serves several purposes, including public access, public safety and forest management.

Provincial Roads Funding Program

The *Minister's Council Report on Forest Sector Competitiveness*, released in June 2005, recommended that the provincial government assume its proportional share of the costs of building and maintaining forest access roads on Crown forests that serve multi-resource uses. The report recommended that the government's share cover 100% of primary road costs, and 50% of secondary road costs. As a result, in September 2005 the Minister of Natural Resources announced the Road Maintenance Funding Program, with $28 million available to the forest industry to cover the costs of maintaining primary forest access roads. In February 2006 the Premier and the Minister of Natural Resources announced an additional $47 million of funding for the Provincial Roads Funding Program. Beginning April 1, 2006, a total of $75 million was made available annually to contribute to the expenses incurred by the forest industry to construct and maintain forest access roads.

Roads eligible for funding have to be identified as primary or branch forest access roads in approved Forest Management Plans and Annual Work Schedules, be located on Crown land, and not be limited to use only by the forest industry. These funded forest access roads benefit not only the forest industry, but also many other users, including: mining companies, tourism operators, Aboriginal communities, utility and railway companies, hunters, anglers, campers, trappers, cottagers, and the general public. These roads also provide part of the rural infrastructure for emergency preparedness and response.

Road Access Control and Decommissioning

For reasons of public safety and/or resource management, forest access roads may be closed to certain uses on a temporary, seasonal, or permanent basis. Methods used to control or limit access can be classified into two categories: erecting signs to advise the public of the restriction (referred to as signage); or, installing gates or using other physical means such as ditching (referred to as gated or physical barrier). Decommissioning of roads may be accomplished by physical means (ditching, culvert or bridge removal, berming and scarification), or roads may be left to deteriorate naturally. Operational roads may be constructed and decommissioned in the same year. Road access control and decommissioning must be planned in advance of construction, and documented in the FMP for each management unit. These activities must also be reported in the management unit annual report.

Forest Access Road

Summary of Roads Funding Programs - 2007/08

- In 2007/08 spending for the Forest Access Capital Roads program (MNR/MNDM) was $4.2 million;
- In 2007/08 the MNR entered into 49 road construction and maintenance agreements with Sustainable Forest License holders/Forest Resource License holders on 46 management units (including the Algonquin Forest Authority); and
- The forest industry incurred costs of $87.1 million on the construction, re-construction, maintenance, and monitoring of over 23,000 km of primary and branch roads, and the construction/repair/replacement of over 1,900 stream crossings. The government's share of this work was just under $75.0 million (Table 6a). The forest industry incurred 100% of the costs of constructing and maintaining all operational roads on Crown lands.

Summary of Roads Construction, Maintenance and Use Management - 2007/08

- In 2007/08, 4,872 kilometres of Primary, Branch and Operational roads were constructed (Table 6b). The majority of the roads constructed during 2007/08 were operational roads;
- Branch road construction has increased since 2006/07 (Figure 6a); and
- In 2007/08, 20,623 kilometres of roads were maintained, with the majority of the road maintenance activities occurring on primary roads (Table 6c and 6d).

Figure 6a - Road Construction by Year

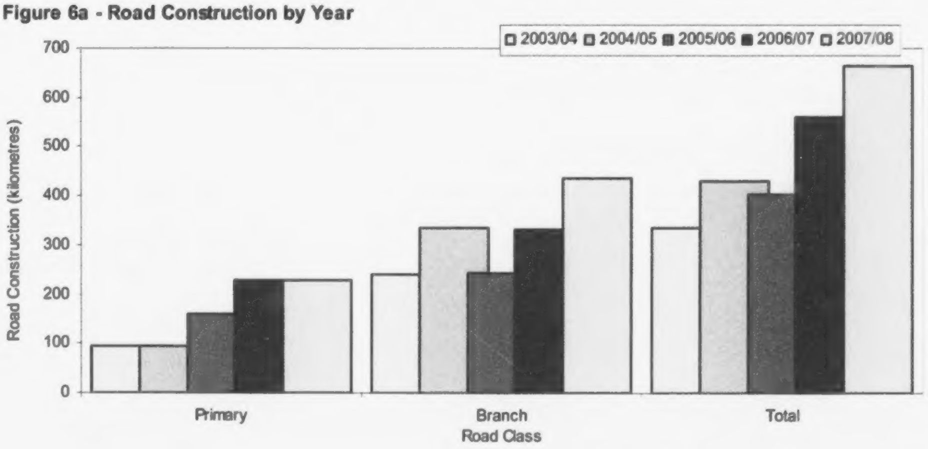


Table 6a - 2007/08 Roads Funding Program

Management Unit	MNR Region[1]	Total Road Program Reimbursement Primary Roads	Branch Roads	Total
Algoma Forest	NE	$1,095,758	$37,242	$1,133,001
Algonquin Park Forest	SR	$732,590	$489,153	$1,221,743
Armstrong Forest	NW	$686,629	$508,968	$1,195,597
Bancroft-Minden Forest	SR	$403,305	$118,160	$521,464
Big Pic Forest	NE	$1,942,740	$85,386	$2,028,126
Black River Forest	NE	$285,524	$6,877	$292,401
Black Sturgeon Forest	NW	$759,461	$329,148	$1,088,610
Caribou Forest	NW	$1,232,378	$125,647	$1,358,025
Cochrane Moose River Forest	NE	$730,059	$12,636	$742,694
Crossroute Forest	NW	$2,299,183	$949,642	$3,248,825
Dog River-Mattawin Forest	NW	$2,261,592	$742,150	$3,003,741
Dryden Forest	NW	$490,957	$26,074	$517,031
English River Forest	NW	$1,430,534	$280,784	$1,711,318
French/Severn Forest	SR	$891,253	$0	$891,253
Gordon Cosens Forest	NE	$4,169,711	$382,017	$4,551,728
Hearst Forest	NE	$1,542,073	$567,118	$2,109,191
Iroquois Falls Forest	NE	$2,111,975	$418,862	$2,530,838
Kenogami Forest	NW	$3,708,555	$233,198	$3,941,752
Kenora Forest	NW	$417,415	$100,212	$517,627
Lac Seul Forest	NW	$1,619,991	$1,005,400	$2,625,390
Lake Nipigon Forest	NW	$1,417,985	$97,973	$1,515,958
Lakehead Forest	NW	$690,918	$249,502	$940,419
Magpie Forest	NE	$510,789	$157,342	$668,132
Martel Forest	NE	$2,620,227	$182,328	$2,802,555
Mazinaw-Lanark Forest	SR	$229,152	$105,007	$334,158
Nagagami Forest	NE	$1,135,947	$78,783	$1,214,730
Nighthawk Forest	NE	$998,356	$5,013	$1,003,368
Nipissing Forest	NE	$1,393,748	$37,949	$1,431,697
Northshore Forest	NE	$1,581,277	$187,076	$1,768,353
Ogoki Forest	NW	$1,941,577	$248,705	$2,190,282
Ottawa Valley Forest	SR	$795,593	$118,954	$914,547
Pic River Ojibway Forest	NW	$102,403	$69,766	$172,170
Pineland Forest	NE	$1,090,220	$0	$1,090,220
Red Lake Forest	NW	$473,259	$509	$473,767
Romeo Malette Forest	NE	$1,129,135	$36,207	$1,165,342
Sapawe Forest	NW	$734,169	$8,301	$742,470
Smooth Rock Falls Forest	NE	$298,654	$164,159	$462,813
Spanish Forest	NE	$3,269,372	$23,110	$3,292,482
Spruce River Forest	NW	$1,832,253	$186,981	$2,019,234
Sudbury Forest	NE	$890,717	$0	$890,717
Temagami Forest	NE	$396,275	$60,765	$457,039
Timiskaming Forest	NE	$4,040,271	$0	$4,040,271
Trout Lake Forest	NW	$2,940,042	$318,353	$3,258,395
Wabigoon Forest	NW	$3,113,023	$214,350	$3,327,373
Whiskey Jack Forest	NW	$1,536,189	$161,816	$1,698,005
White River Forest	NE	$1,260,613	$0	$1,260,613
	Total	**$65,233,847**	**$9,131,623**	**$74,365,465**
			MNR Admin Costs	$725,807
			Total Funds Spent	**$75,091,272**

[1] NW = Northwest Region; NE = Northeast Region; SR = Southern Region

Table 6b - Kilometres of Road Construction, 2007/08

	MNR Region			
Road Class	Northwest	Northeast	Southern	Total
Primary	88	141	0	229
Branch	212	221	2	435
Operational	1,852	2,126	229	4,208
Total	**2,153**	**2,488**	**231**	**4,872**

Table 6c - Road Maintenance by Road Class

Road Type	2005/06	2006/07	2007/08
Primary	10,200	10,749	11,916
Branch	4,621	3,444	3,247
Operational and Existing	6,033	6,724	5,460
Total	**20,855**	**20,917**	**20,623**

Table 6d - Kilometres of Road Maintenance, 2007/08

	MNR Region			
Road Type	Northwest	Northeast	Southern	Total
Primary	7,002	4,125	790	11,916
Branch	2,197	518	533	3,247
Operational and Existing	1,885	3,385	190	5,460
Total	**11,083**	**8,027**	**1,514**	**20,623**

Summary of Road Access Control and Decommissioning - 2007/08

- 1,103 kilometres of primary, branch and operation roads had access controls established in 2007/08, with the majority of access controls under the signaged control type (Table 6e); and
- 597 kilometres of primary, branch and operation roads were decommissioned in 2007/08 by physical or natural means (Table 6f).

Table 6e - Kilometres of Road Access Controls Established, 2007/08

Access Control	MNR Region			
Type	Northwest	Northeast	Southern	Total
Signage	505	313	11	828
Gate/Barrier	86	48	25	159
Other	112	0	4	116
Total	**703**	**360**	**40**	**1,103**

Table 6f - Kilometres of Roads Decommissioned, 2007/08

	MNR Region			
	Northwest	Northeast	Southern	Total
Physical	38	79	4	121
Natural	109	356	11	476
Total	**147**	**435**	**15**	**597**

7. Compliance Monitoring

Ontario's forest operations compliance monitoring system is designed to ensure the Ministry of Natural Resources (MNR) and the forest industry conduct forest operations in compliance with legislation and in accordance with approved plans (e.g. Forest Management Plans). It also ensures that forest management related statutes and regulations are interpreted consistently and enforced fairly but firmly in all cases of non-compliance.

The forest compliance program is based on a partnership between the MNR and forest industry, with a clear separation of roles and responsibilities. The industry role is one of "self-monitoring" wherein the Sustainable Forest Licence (SFL) holder has lead responsibility for a comprehensive forest operations compliance program as a condition of their licence. This program includes planning, monitoring, inspecting, reporting, training and education. The SFL holder is required to report all suspected incidents of non-compliance on their Management Unit (MU) to the MNR. As the regulatory agency, MNR retains full responsibility for administration and implementation of the Crown Forest Sustainability Act (CFSA) which includes monitoring, auditing, determining compliance status, taking appropriate enforcement action and applying remedies when necessary.

The compliance program reports forest operation infractions incurred by private individuals as "non SFL related". Those MUs not assigned to an SFL remain the MNR's responsibility for delivering all aspects of the compliance program. The Forest Operations Information Program (FOIP) is the system used for recording compliance inspections. This web based application provides a consistent approach to all forest compliance inspectors for reporting inspections. Its use is mandatory for reporting on all forest operations inspections conducted on Crown land.

All MNR and forest industry forest compliance inspectors must be certified. This certification ensures consistent skills and competencies in compliance assessment and reporting among inspectors. To maintain certification, inspectors are required to undertake a program of continuing education and to undergo testing on a five year cycle.

Compliance inspection on a harvest block

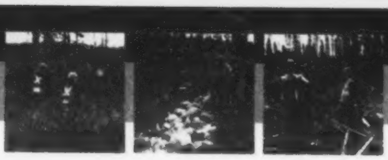
Remedy and Enforcement

Industry must report all suspected non-compliance situations, which MNR then verifies and determines, where necessary, the appropriate enforcement action and/or remedy.

The earlier an operational problem is identified and responded to, the more likely the impacts can be avoided, prevented or mitigated. In many instances, immediate corrective action is undertaken and enforcement action or remedies are not warranted.

CFSA enforcement and remedy provisions are primarily directed at licensees of the Crown, but any person who contravenes the CFSA may be subject to its remedies. Any enforcement action taken or remedy applied will be unique to and reflect the circumstances and nature of the infraction and the offender.

Although all incidents of non-compliance are reported in the fiscal year in which they occurred, it often takes time to determine and apply remedies (e.g. under investigation or subject to court action). Remedies are recorded and reported when resolved.



Summary of Forest Operations Compliance Monitoring – 2007/08

- The average compliance rate across all operations (Access, Harvest, Renewal, and Maintenance) for both industry and MNR is 95% for the 2007/08 reporting period;
- 326 certified forest operations compliance inspectors submitted 4,806 inspections to FOIP during 2007/08. This number is down 12% from 2006/07;
- The decrease in the number of inspections undertaken by both industry and MNR (Table 7a) may be attributed to changes in reporting requirements, management unit consolidations, and the overall decline in area harvested resulting from economic decline;
- The number and value of remedy and enforcement actions (Table 7b) has decreased from previous years, and can most likely be attributed to the same factors noted above; and
- When comparing non compliant reports against total number of reports, MNR reported a higher rate of non compliance (13%) compared to forest industry (4%). The difference may be partially attributable to MNR's focus on higher risk operations, and MNR conducting inspections in response to public inquiries.

Table 7a - Forest Operations Compliance Inspection Reports Summary 2007/08

	INDUSTRY			MNR		
OPERATION TYPE	Total # Reports	Total # Compliant Reports	Total # Non Compliant Reports	Total # Audits/ Spot Checks	Total # Compliant Reports	Total # Non Compliant Reports
Access	991	962	29	249	194	55
Harvest	2,567	2,453	114	560	510	56
Renewal	269	256	13	69	65	4
Maintenance	81	78	3	20	19	1
2007/08 Total	**3,908**	**3,749**	**159**	**898**	**788**	**116**
2006-2007	4,918	4,721	197	1,280	1,101	179
2005-2006	5,817	5,584	233	1,377	1,180	197
2004-2005	6,806	6,561	245	1,604	1,359	245
2003-2004	6,888	6,565	323	2,216	1,809	407

Source: 2004/05 - 2007/08 data taken from FOIP (Forest Operations Information Program as of Aug 4, 2009)
Source: 2003/04 data taken from 2005/06 Annual Report on Forest Management

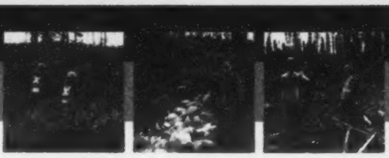


Table 7b - Remedy and Enforcement Action Taken 2007/08

Method	Number[c]	Value
Administrative Penalty[a]	30	$53, 156
Offence Charge[b]	5	$250
Stop Work Order	0	n/a
Repair Order	1	n/a
Compliance Order	17	n/a
Warnings	92	n/a
Corrective Action	94	n/a
Total Actions Taken 2007/08	**239**	**$53, 406**
Total Actions Taken 2006/07	291	$154, 806
Total Actions Taken 2005/06	324	$101, 744
Total Actions Taken 2004/05	454	$108, 880
Total Actions Taken 2003/04	56	$213, 151

[a] *To Forestry Futures Trust Fund*

[b] *To Consolidated Revenue Fund (general revenue)*

[c] *The numbers and values of remedies and enforcement actions may include persons who did not hold a forest resource licence and were subject to remedies under the Act.*

Sources: FOIP (Forest Operations Information Program), Aug 05, 2009

OGFER (Oracle Government Financial Receivables) and

CAVRS (Compliance Activity Violations Reporting System), Aug 05, 2009

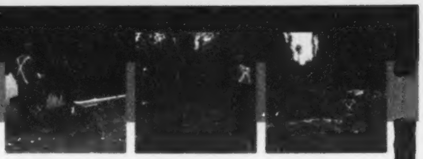
8. Independent Forest Audits

Independent Forest Audits (IFAs) are a requirement of the Crown Forest Sustainability Act (CFSA - Ontario Regulation 160/04), Condition 28 of the MNR's Class Environmental Assessment Approval for Forest Management on Crown Lands in Ontario (2003), and are a condition of all Sustainable Forest Licences (SFLs). All management units are audited at least once every five years to review operations and to examine forest management activities carried out over the previous five years.

An independent forest audit is a systematic and documented verification process to assess adherence to the forest management plan and to the planning process. The performance of both the licensee and the MNR are audited during the IFA. Assessing the interpretation and application of provincial legislation, manuals, policies, and guidelines at the management unit level is also part of the audit. Auditors examine the effectiveness in achieving the planned objectives and provide an assessment of forest sustainability for the management unit. Audit teams also review licensee compliance with the obligations of their specific SFL.

The audit terms of reference are the same for all IFAs. This includes the audit team personnel requirements. All members of an audit team must have a minimum of seven years recent and relevant experience in forest types similar to those being audited. They must be independent of the operations they audit, as well as free from conflict of interest throughout the process. The audit team must include a Registered Professional Forester. Audit teams are required to provide an audit against the requirements that were in effect during the audit period, and prepare a subsequent report for publication. Auditor selection and contract management is facilitated by the Forestry Futures Trust Committee and audits are paid for with money from the Forestry Futures Trust Fund.

In order to fully address the audit purpose and objectives, an audit process and protocol document sets out the forest management principles, criteria, and procedures for



undertaking IFAs. The audit protocol identifies eight guiding principles: commitment; public participation; forest management planning; forest management plan (FMP) implementation; systems support; monitoring; achievement of management objectives and forest sustainability; and, contractual obligations. For each principle, a series of specific criteria have been identified that, when met, will result in achievement of the principle.

Where criteria are not achieved, or the audit team observes a critical lack of effectiveness in forest management activities, the audit team may develop a recommendation to address the situation. Recommendations are directed to the licensee, the MNR, or both auditees jointly. Audit teams may also recognize and document exceptional forest management practices (commonly known as "best practices").

Action plans must be developed by the auditees to address audit report recommendations. The SFL holder and the applicable MNR district jointly develop the action plan which is then subject to the approval of senior MNR executives. A status report on the implementation of the action plan is required two years after its approval, to ensure progress is occurring as specified in the plan. All IFA reports are tabled in the Legislature and are available on MNR's web site.

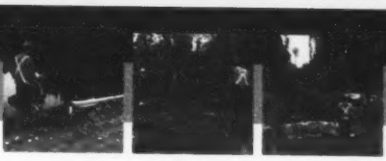
Summary of Independent Forest Audits – 2007/08

Independent forest audits were completed on nine management units in 2007. Eight of the management units were managed via SFLs throughout the five-year audit period. The Algonquin Park Forest was managed by the Algonquin Forestry Authority under an SFL-like agreement known as the Algonquin Park Forestry Agreement.

External consultants, independent of the licensees and the MNR, carried out the audits. Table 8a provides a complete listing of the 2007 audits by management unit, licensee and independent auditor.

Table 8a - 2007 Independent Forest Audits

Management Unit	Licensee	Independent Auditor
Algonquin Park Forest	Algonquin Forest Authority	BioForest Technologies Inc.
Crossroute Forest	Abitibi-Consolidated Company of Canada	ArborVitae Environmental Services Ltd.
Hearst Forest	Hearst Forest Management Inc.	ArborVitae Environmental Services Ltd.
Martel Forest	Tembec Industries Inc.	Arbex Forest Resource Consultants Ltd.
Nagagami Forest	Nagagami Forest Management Ltd.	KBM Forestry Consultants Inc.
Northshore Forest	Northshore Forest Inc.	ArborVitae Environmental Services Ltd.
Pineland Forest	Domtar Inc.	Arbex Forest Resource Consultants Ltd.
Romeo Malette Forest	Tembec Industries Inc.	KBM Forestry Consultants Inc.
Sapawe Forest	Atikokan Forest Products Ltd.	KBM Forestry Consultants Inc.



Overall, the results of the 2007 IFAs were very positive. All audit reports concluded that, during the term of the audit, the forests were being managed in general compliance with legislation and policy requirements, with licence requirements, and within the principles of sustainable forest management (Table 8b). All audit reports recommended the SFL be extended for a further five-year term. In the case of the Algonquin Park Forest, the audit team recommended the Algonquin Park Forestry Agreement be extended for a five-year term.

Table 8b - Independent Forest Audit Results for 2007 Audits

Management Unit	In Compliance[1]	Sustainably Managed	SFL Extension Recommended
Algonquin Park Forest	Yes	Yes	Yes[2]
Crossroute Forest	Yes	Yes	Yes
Hearst Forest	Yes	Yes	Yes
Martel Forest	Yes	Yes	Yes
Nagagami Forest	Yes	Yes	Yes
Northshore Forest	Yes	Yes	Yes
Pineland Forest	Yes	Yes	Yes
Romeo Malette Forest	Yes	Yes	Yes
Sapawe Forest	Yes	Yes	Yes

[1] *Managed in overall compliance with legislative and policy requirements in effect during the audit period.*

[2] *The Algonquin Park Forest is managed under the Algonquin Park Forestry Agreement.*
The agreement is similar to an SFL but defines terms and conditions regarding operations in the park.

The audit reports provided a total of 152 recommendations. Table 8c provides a summary of recommendations by audit principle. The majority of the recommendations were related to forest management planning (36%), followed by plan implementation (26%), and monitoring (13%).

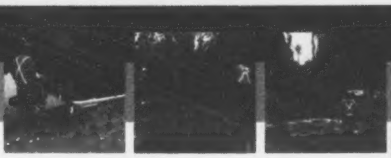


Table 8c - Summary of 2007 IFA Recommendations by Principle

	Recommendations by Audit Principle								
Management Unit	Commitment	Public Participation	Forest Management Planning	Plan Implimentation	System Support	Monitoring	Management Objectives and Forest Sustainability	Contractual Obligations	Total
Algonquin Park Forest	0	0	7	2	0	2	0	0	11
Crossroute Forest	0	0	7	2	1	0	2	1	13
Hearst Forest	0	0	12	5	0	3	1	2	23
Martel Forest	0	2	0	3	1	0	0	0	6
Nagagami Forest	1	4	9	2	0	6	2	5	29
Northshore Forest	0	2	8	5	0	3	0	0	18
Pineland Forest	0	3	2	4	1	2	1	1	14
Romeo Malette Forest	0	2	10	10	0	2	0	4	28
Sapawe Forest	0	0	0	6	1	1	1	1	10
Total[1]	**1 (<1%)**	**13 (9%)**	**55 (36%)**	**39 (26%)**	**4 (3%)**	**19 (13%)**	**7 (5%)**	**14 (9%)**	**152 (100%)**

[1] The number in parenthesis represents the number of audit recommendations by audit principle as a percentage of the total number of audit recommendations (percentage numbers have been rounded off).

Recommendations common to a number of the reports, grouped by subject matter, include:

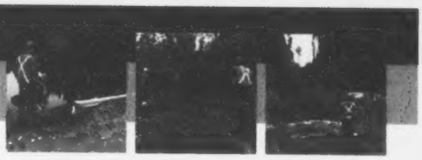
Public Participation:

- The MNR needs to ensure that notices, particularly aerial spray notices, meet requirements and are sufficiently detailed to identify locations; and
- The MNR needs to work with the Ministry of the Environment to improve the Individual Environmental Assessment request process.

Forest Management Planning

The MNR needs to review the status of values information and allocate more funding to ensure the timely collection and delivery of values information;

- Certain licence holders need to improve forest management plan documentation, particularly in meeting Forest Management Planning Manual (FMPM) requirements and ensuring document consistency; and
- Recommendations identify the need to further review strategic model outputs related to wildlife habitat to ensure they adequately address requirements.



Plan Implementation

- Certain licence holders need to improve their slash management practices;
- A number of licence holders need to improve their road-building practices (specifically cross drainage installation) and watercrossing selection, installation and maintenance practices;
- Certain licence holders need to improve application of silvicultural and area of concern prescriptions; and
- A number of licence holders need to review their programs for tending of renewed stands.

Monitoring

- The MNR and the forest industry need to improve their understanding of compliance standards and cooperate on determining causes of compliance infractions;
- The MNR needs to ensure adequate funding and resources are available to meet compliance monitoring commitments;
- A number of licence holders need to improve their silvicultural effectiveness monitoring and reporting programs, particularly with respect to addressing historic areas that have not been adequately regenerated; and
- The MNR needs to review the status of access restrictions and/or controls.

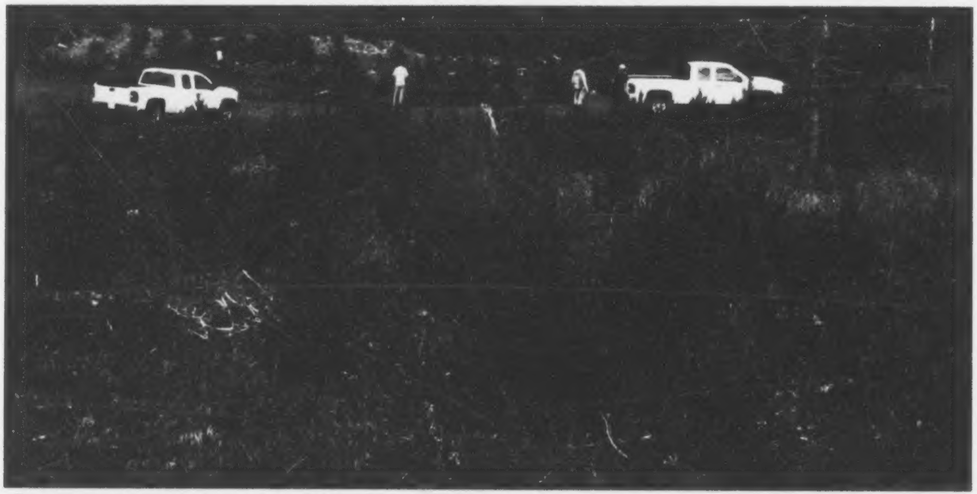
Systems Support

- Recommendations identified the need for improvements in District MNR staffing levels, particularly related to compliance monitoring and forest management plan development.

Contractual Obligations

- Recommendations identified the need for reviews of and revisions to Ministerial wood supply commitments, particularly for poplar;
- The MNR and the forest industry need to ensure the timely submission of complete Action Plans and Status Reports in response to Independent Forest Audits; and
- A number of licence holders need to improve their efforts in maintaining the Forest Renewal Trust Fund Minimum Balance.

Table 8d summarizes the recommendations by the organization the recommendation is directed towards. Recommendation responsibility was split roughly evenly between the licensee (38% of all audit recommendations) and the MNR (43% of all audit recommendations). Nineteen percent of the audit recommendations were assigned jointly to the licensee and the MNR. The audit reports identified six best practices (Table 8e).



Regeneration assessment on the Lakehead Forest

Table 8d - Summary of 2007 IFA Recommendations by Responsibility

	Recommendations by Organization			
Management Unit	Licensee	MNR	Joint (Licensee & MNR)[1]	Total
Algonquin Park Forest	2	7	2	11
Crossroute Forest	6	5	2	13
Hearst Forest	12	7	4	23
Martel Forest	0	6	0	6
Nagagami Forest	9	12	8	29
Northshore Forest	6	11	1	18
Pineland Forest	2	9	3	14
Romeo Malette Forest	15	7	6	28
Sapawe Forest	6	1	3	10
Total[2]	**58 (38%)**	**65 (43%)**	**29 (19%)**	**152 (100%)**

[1] *Recommendations directed at planning teams were assigned as joint recommendations.*

[2] *The number in parenthesis represents the number of audit recommendations by organization as a percentage of the total number of audit recommendations.*

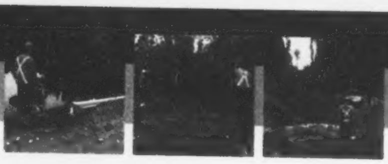


Table 8e - Summary of 2007 IFA Best Practices

Management Unit	Best Practice
Sapawe Forest	MNR and Atikokan Forest Products for the historical white pine range study and the implementation of a white pine and red pine restoration program which is an important advance that can be built upon in future plans and can be emulated in other boreal transition forests within the Region.
Romeo Malette Forest	Tembec produced a state-of-the-art inventory that will vastly improve strategic and operational planning on the Romeo Malette Forest. Tembec is commended for minimizing site disturbance during the audit term.
Pineland Forest	The Chapleau District's First Nation Task Team (FNTT) is a proactive and innovative approach to cross cultural communications in forest management planning. The FNTT was a positive influence in bringing forward aboriginal perspectives in the development of the 2006 FMP.
Martel Forest	The Chapleau District's First Nation Task Team (FNTT) is a proactive and innovative approach to cross cultural communications in forest management planning. The FNTT was a positive influence in bringing forward aboriginal perspectives in the development of the 2006 FMP.
Nagagami Forest	The comprehensive training delivered through Abitibi-Consolidated for staff, contractors and shareholders on the Nagagami Forest.

Summary of 2003-2007 Audit Reports

Table 8f summarizes the audit results from 49 audit reports completed over a 5-year period from 2003 to 2007. During this 5-year period 43 reports (88%) indicated management units were managed in accordance with legislative and policy requirements in effect during the audit term. A further 3 audit reports (6%) identified management units that were generally managed in compliance with legislative and policy requirements; however, in these instances the auditor noted significant exceptions or conditions that required immediate action by the those audited.

Table 8f - Summary of 2003-2007 Audit Reports

		Recommendation on Extension		
Audit Year	Audit Reports	Extend	Extend with Conditions	Do Not Extend
2003	6	6	0	0
2004	8	6	2	0
2005	11	8	0	3[1]
2006	15	14[2]	1	0
2007	9	9[3]	0	0
Total	49	43	3	3

[1] Includes the Cochrane-Moose River Management Unit which is not managed under a Sustainable Forest Licence.

[2] Includes the Temagami Management Unit which is not managed under a Sustainable Forest Licence.

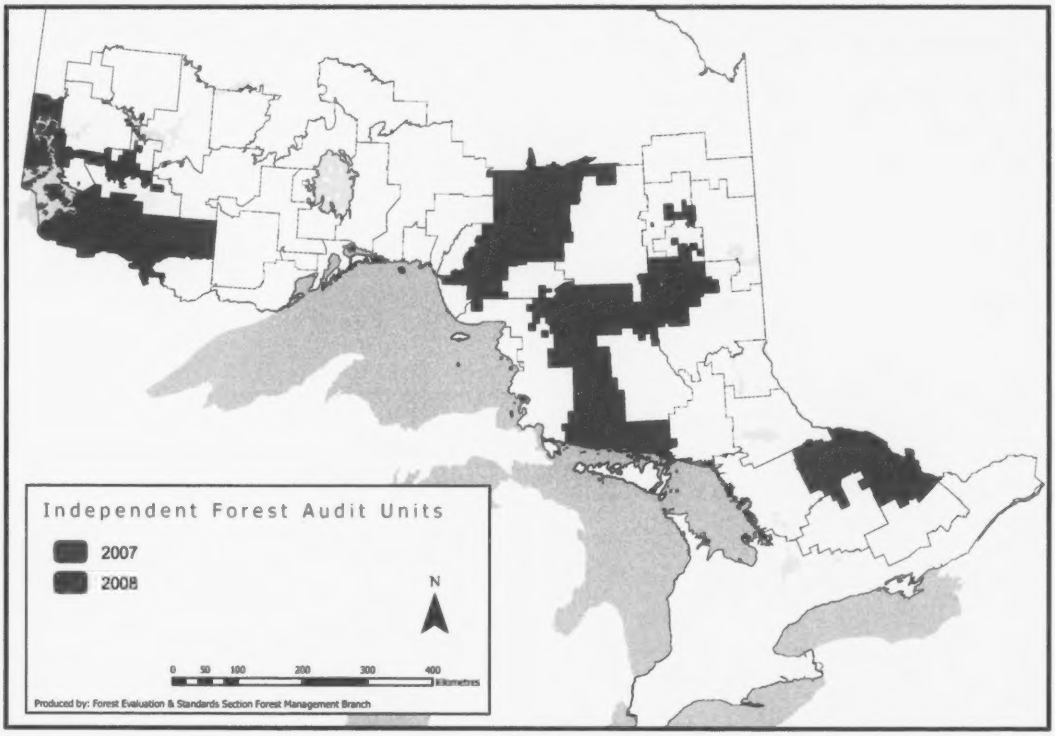
[3] Includes the Algonquin Park Forest which is not managed under a Sustainable Forest Licence.

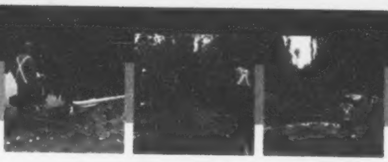
The independent forest audit program is serving its purpose. Audit reports identify areas for improvement before they begin to have serious consequences. The MNR and SFL holders respond by putting solutions in place, which are documented in mandatory action plans that are developed subsequent to the completion of audit reports.

Future Audit Program

Independent Forest Audits are scheduled for the following five forests in 2008: Dryden, Kenora, Nighthawk, Ottawa Valley, and White River (see Figure 8a). The results of the audits will be published upon completion. All of the forests are being audited for a third time under the Independent Forest Audit Program.

Figure 8a - Management Units Audited in 2007 and Management Units Scheduled for Audit in 2008


Independent Forest Audit Units
2007
2008
N
0
50
100
200
300
400
Kilometres
Produced by: Forest Evaluation & Standards Section Forest Management Branch



Program Review

In 2006 the MNR initiated a review of the Independent Forest Audit program as required by Forest Management Class EA Condition 28(c) and the CFSA, Ontario Regulation 160/04. The purpose of the review and revision process is to ensure the continued efficiency and effectiveness of the audit program. The public and stakeholders are consulted as part of the review.

The 2006 review was led by an external consultant and concluded that the program continues to be effective. It also noted that changes can be made to make the program more efficient and to improve how quickly the audit reports are made public. A number of changes to the IFA process are expected to be implemented in 2008.

9. Forest Certification

Forest certification is a market-oriented means of promoting sustainable forest management, in which an independent third party evaluates forest management systems according to external pre-established standards. In April 2004 the Minister of Natural Resources announced his intention to have all sustainable forest licences certified to an acceptable performance standard by the end of 2007. The certification process requires applicants to demonstrate to an independent third party that they are complying with, or progressing towards, their chosen certification standard.

Forest products consumers are assured of an unbiased evaluation when forest certification evaluations are implemented by independent third party organizations (called certifiers). Within the limits of its provincial government mandate, the MNR provides technical and policy advice, both during the development of certification standards and to forest companies seeking certification of forest lands in Ontario.

There are three forest certification standards used by Ontario forest companies.

1. The Canadian Standards Association (CSA) Sustainable Forest Management (SFM) Standard, approved by the Standards Council of Canada ;
2. The two standards of the international Forest Stewardship Council (FSC) Principles and Criteria for Forest Management that are applicable to Ontario: FSC Standards for Well Managed Forests in the GLSL Forests of Ontario and Quebec (draft); and the National Boreal Standard; and
3. The Sustainable Forestry Initiative Inc.'s, Sustainable Forestry Initiative (SFI).

Many companies, as a first step in forest certification, have registered their environmental management systems to the International Organization for Standardization Environmental Management System (ISO) 14001.

The MNR ensures the sustainable forest management of Crown forests through a rigorous policy and regulatory framework. Forest companies operating in Ontario are required to comply with long-term, ecosystem-based forest management planning. Extension of SFLs is dependent upon satisfactory results of a mandatory Independent Forest Audit. Therefore, forest management companies in Ontario are well positioned to meet any forest certification/registration system standard. Table 9a and Figure 9a show forest management units that have been certified in Ontario as of April 2008.

Figure 9a: Forest Certification key map for Ontario.

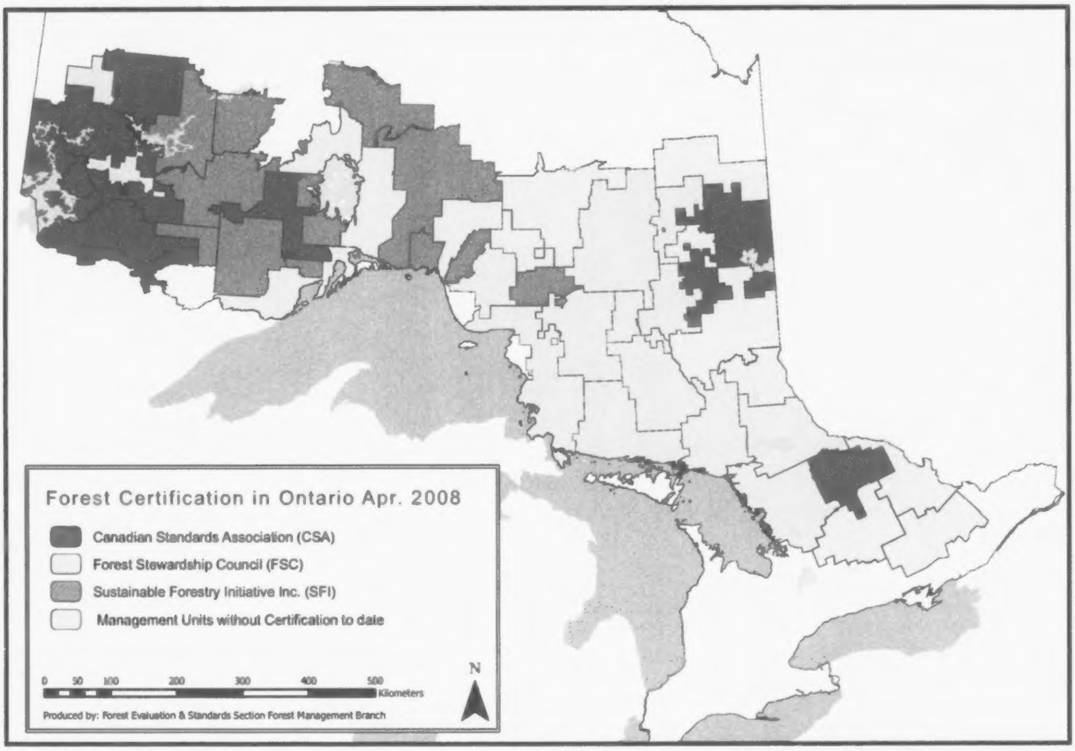

Forest Certification in Ontario Apr. 2008
Canadian Standards Association (CSA)
Forest Stewardship Council (FSC)
Sustainable Forestry Initiative Inc. (SFI)
Management Units without Certification to date
0 50 100 200 300 400 500
Kilometers
N
Produced by: Forest Evaluation & Standards Section Forest Management Branch

Table 9a - Sustainable Forest Licences Certified and Not Certified in Ontario as of March 31, 2008

Management Unit	Sustainable Forest Licence Holder	Certification Standard (Registration date)
Algoma Forest	Clergue Forest Management Inc.	FSC (Jun 2005)
Algonquin Park Forest	**Algonquin Forestry Authority**	**CSA (Feb 2008)**
Bancroft- Minden Forest	Bancroft- Minden Forest Company Inc.	Not Certified
Big Pic Forest	Marathon Pulp Inc.	Not Certified
Black River Forest	**Great West Timber Limited**	**SFI (Jun 2007)**
Black Sturgeon Forest	Bowater Canadian Forest Products Inc.	SFI (Jan 2005)
Caribou Forest	Bowater Canadian Forest Products Inc.	SFI (Jan 2005)
Crossroute Forest	Abitibi-Consolidated Company of Canada	CSA (Dec 2002)
Dog River-Matawin Forest	Bowater Canadian Forest Products Inc.	SFI (Jan 2005)
Dryden Forest	Dryden Forest Management Company Ltd.	Not Certified
English River Forest	Bowater Canadian Forest Products Inc.	SFI (Jan 2005)
French-Severn Forest	Westwind Forest Stewardship Inc.	FSC (Mar 2002)
Gordon Cosens Forest	Spruce Falls Inc.	FSC (Apr 2003)
Hearst Forest	Hearst Forest Management Inc.	Not Certified
Iroquois Falls Forest	Abitibi-Consolidated Company of Canada	CSA (Feb 2004)
Kenogami Forest	Terrace Bay Pulp Inc.	SFI (Jan 2005)
Kenora Forest	Weyerhaeuser Company Ltd.	CSA (Apr 2005)
Lac Seul Forest	**McKenzie Forest Products Inc.**	**SFI (Jun 2007)**
Lake Nipigon Forest	Norampac Inc.	Not Certified
Magpie Forest	**Dubreuil Forest Products Limited**	**SFI (Jun 2007)**
Martel Forest	Tembec Industries Inc.	FSC (Jan 2006)
Mazinaw-Lanark Forest	Mazinaw-Lanark Forest Inc.	Not Certified
Nagagami Forest	Nagagami Forest Management Ltd.	Not Certified
Nighthawk Forest	Abitibi-Consolidated Company of Canada	CSA (Feb 2004)
Nipissing Forest	Nipissing Forest Resource Management Inc.	FSC (May 2003)
Northshore Forest	Northshore Forest Inc.	FSC (Jun 2005)
Ogoki Forest	**Long Lake Forest Products Inc.**	**SFI (Mar 2007)**
Ottawa Valley Forest	Ottawa Valley Forest Inc	Not Certified
Pic River Ojibway Forest	**Great West Timber Limited**	**SFI (Jun 2007)**
Pineland Forest	Pineland Timber Company Ltd.	FSC (Aug 2005)
Red Lake Forest	Red Lake Forest Management Company Ltd.	Not Certified
Romeo Malette Forest	Tembec Industries Inc.	FSC (Nov 2004)
Sapawe Forest	**Atikokan Forest Products Ltd.**	**SFI (Jun 2007)**
Smooth Rock Falls Forest	Tembec Industries Inc.	FSC (Mar 2005)
Spanish Forest	Domtar Inc.	FSC (Aug 2006)
Spruce River Forest	Abitibi-Consolidated Company of Canada	CSA (Oct 2003)
Sudbury Forest	The Vermillion Forest Management Company Ltd.	FSC (May 2006)
Timiskaming Forest	Timiskaming Forest Alliance Inc.	Not Certified
Trout Lake Forest	Domtar Pulp and Paper Products Inc.	CSA (Dec 2003)
Wabigoon Forest	Domtar Pulp and Paper Products Inc.	CSA (Dec 2003)
Whiskey Jack Forest	Abitibi-Consolidated Company of Canada	CSA (Feb 2005)
White River Forest	**Domtar Inc.**	**FSC (Aug 2007)**

Note: Units in **bold** represent certification for 2007/08.

10. Forest Science, Policy Development & Research

Ontario

The knowledge base for sustainable forest management is continually expanding. MNR remains current with this expanding knowledge base through research, scientific studies, and technical and policy development programs in a variety of subjects, including:

- Development of new and improved data and information sources;
- Creation and implementation of new policies, procedures, and forest management guides;
- Development of new forest management methods, models, and tools; and
- Development and implementation of long-term monitoring programs and scientific studies.

This chapter highlights significant advances and milestones during 2007/08 in specific policy development, technical development, and scientific programs related to forest management made by the MNR in cooperation with its partners. Many research projects are in progress or deal with subjects indirectly related to forest management and are not reported in this document. More information about other research work undertaken by the MNR is available at http://ontariosforests.mnr.gov.on.ca.

Climate Change and Carbon Sequestration

Over the last 50 to 100 years, increased industrialization and human activities have begun to affect the balance of the Earth's natural climate. Increasing amounts of greenhouse gases are causing the Earth's atmosphere to heat up. When this global warming affects our weather patterns and climate conditions, it is referred to as climate change. In Ontario, it is expected that the average temperature will rise by as much as three to eight degrees Celsius over the next century. Climate change will affect many of the social and environmental values that Ontarians have come to appreciate.

In 2007/08, the MNR continued to implement its strategic plan on climate change in an effort to mitigate the rate of global warming and the impacts associated with climate change. The MNR has sponsored, cosponsored, or participated in many research projects designed to provide a better understanding of the effects of climate change on the health of Ontario's ecosystems, communities, and people. Research projects continued in 2007/08, including investigations into:

- Geological sequestration of carbon dioxide (carbon capture from large emitters and storage of that carbon underground); and
- Potential impacts of climate change on:
    - Fish habitat;
    - Terrestrial biodiversity;
    - Moose density and distribution;
    - Disturbance regimes (e.g. spruce budworm);
    - Forest succession; and
    - Tourism, outdoor recreation and forestry.

As part of Ontario's strategic plan, the MNR and the Canadian Forest Service developed an approach to estimate Ontario's future climatic trends. These trends were based on scenarios of human activity throughout the 21st century, where a significant increase in temperature and decrease in precipitation by the end of the century were projected. The intent of the report entitled *Climate Change Projections for Ontario: Practical Information for Policymakers and Planners* was to encourage Ontarians to consider climate change when making decisions that have consequences for 50 to 100 years, such as what trees to plant. Accompanying the report was a mapping tool that allowed the user to project seasonal temperature and precipitation patterns based on moderate to high levels of greenhouse gas emissions.

Individuals from government, private sector, and academia gathered together in a conference to discuss potential changes when planting trees, when these changes should be made and whether it is possible to predict the effects of climate change. Other topics, such as tree migration rates, seed management, and the importance of planning for change were

also discussed. Participants of the conference agreed that complex decisions need to be made about how to regenerate forests in an uncertain climate.

Research examining carbon storage in Ontario's forests and wood products continued in 2007/08. A model was developed to predict forest carbon budgets, including the amount of carbon stored in dead and live trees, understory vegetation, downed woody debris, soil, and wood products from harvested trees. Based on this model, the amount of carbon stored in wood products is expected to grow substantially between 2000 and 2100 and is estimated to far outweigh the growth of carbon in forests themselves. Forest management can also play a role in increasing storage of carbon in forests through silviculture, resulting in more carbon dioxide being removed from the atmosphere.

Forest Biofibre Policy

The use of non-renewable fossil fuels, such as oil and natural gas, is seen as a major contributor to greenhouse gas emissions and climate change. To assist in addressing these environmental issues there is a need to make a shift to a low carbon economy by using renewable resources, such as forest biofibre, to provide energy and materials currently derived from fossil fuels.

In 2007/08, work continued on a new policy to guide the allocation and use of previously unused trees and tree parts that could spur innovation and help to diversify the economy. A guiding policy for the use of forest biofibre could support the development and use of clean technologies, help reduce dependence on fossil fuels, reduce energy costs through cogeneration and other bio-energy projects, and provide a source of renewable material to produce bioproducts.

The opportunity exists for Ontario to use its abundant supply of forest biofibre, industrial capacity, infrastructure and expertise to support northern and rural economies create new business opportunities, support sustainable growth and generate new wealth. Resources such as forest biofibre will be used to replace non-renewable inputs for the production of biomaterials, bioenergy and other bioproducts that can reduce the province's dependence on fossil fuels.

Figure 10a - Biofibre Utilization from Crown Forests in Ontario

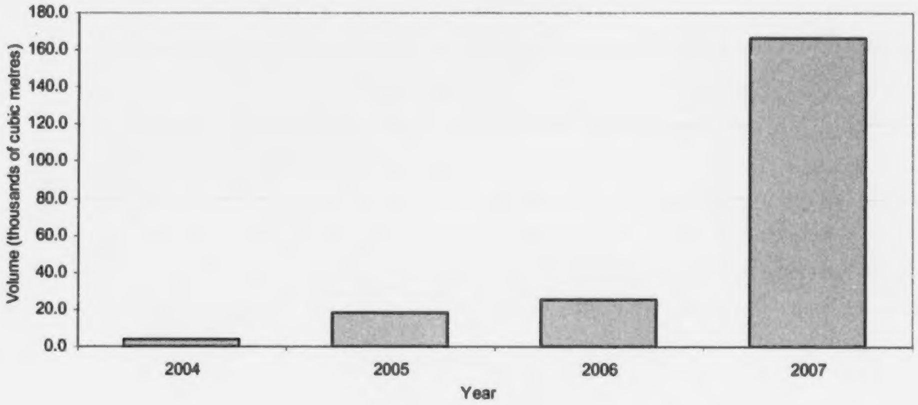


Figure 10a shows an increase in forest biofibre utilization in 2007, which helped to stimulate the creation of a policy on the allocation and use of forest biofibre resources. The forest biofibre policy was finalized and approved on August 13th 2008.

Emulating Natural Disturbance Patterns

The requirement for emulating natural disturbances and landscape patterns in the forest management planning process is a fundamental element of the Crown Forest Sustainability Act (CFSA). As described in the Annual Report on Forest Management 2004/05, the EA Declaration Order required that MNR develop an action plan outlining how the effectiveness of the directions in the Forest Management guide for Natural Disturbance Pattern Emulation (NDPE guide) would be assessed. As part of the implementation of the action plan, the MNR designed and initiated multiple-scale research studies to assess the effectiveness of the direction in the guide at landscape and stand scales over a three-year period.

The studies outlined in the action plan were completed in 2008 and results shared with members of the Provincial Forest Technical Committee, external stakeholders, policymakers and practitioners at MNR provincial, regional and district levels. In addition, the approach used to transfer results of the studies was documented as a case study chapter in a book on forest landscape ecology knowledge transfer. Numerous technical reports were also produced and key results published in peer-reviewed scientific journals. The MNR is preparing new guides that address the conservation of biodiversity at landscape, stand and site scales that will replace most of the MNR's existing forest management guides, including the NDPE guide. The results of the studies were utilized in the preparation of these new guides.

Progress on Forest Management Guides

The MNR has been making progress on restructuring the content of and consolidating the province's forest management guides: For details, refer to *Ontario's Forest Management Guides: An Introduction* at http://ontariosforests.mnr.gov.on.ca. This challenging process will eventually result in a suite of five forest management guides. Progress on the development and review of the guides is discussed below:

Landscape Guide

A revised draft of the Landscape Guide was completed during 2007/08, reflecting the findings of the pilot testing performed on the eco-regional direction-setting approach in the guide. To assist in the implementation of the Landscape Guide, the collation of science-based information packages for each Landscape Guide region and the development of a computer-based tool known as the Ontario Landscape Tool were continued. The MNR planned to complete the guide in 2008 however, development of the Endangered Species Act and policy direction for caribou habitat resulted in a decision that separate volumes of the Landscape Guide would be developed for the Boreal and Great Lakes-St. Lawrence forest regions. The volume for the Great Lakes-St. Lawrence forest region was finalized and approved in May 2009. The volume for the Boreal forest region is expected to be finalized and approved in early 2010. An approach to guide effectiveness monitoring will be included in the final version of each guide.

Stand and Site Guide

A working draft of the Stand and Site Guide was prepared for review in May 2007. Based on comments received from internal MNR staff and the Provincial Forest Technical Committee, a subsequent draft was completed in February 2008 to accommodate the appropriate modifications. This draft was distributed to the forest industry for their input. The development of the approach to guide effectiveness monitoring was initiated during 2007/08 and will be included in the final version of the guide. The MNR is currently finalizing the guide and expects to have an approved guide by 2009.

Spatial Modelling to Evaluate the Effectiveness of Forest Management Guides

Spatial habitat models can help evaluate the effectiveness of forest management guides and management plan implementation. For forest management guides geared to conserving

specific biodiversity values, clear statements of how species will respond to particular elements of the guide are required. Models can be utilized to predict what will happen to wildlife as a result of altering combinations of management factors at both stand and landscape scales.

By ensuring clear linkages are made between forest management activities and expected wildlife responses, a better understanding of the consequences of policy decisions on the sustainability of wildlife values can be established in an adaptive management approach.

Landscape Scripting Language is a multiple-scale spatial modelling tool developed at the Centre for Northern Forest Ecosystem Research in Thunder Bay. During 2007/08, this modelling approach continued to be utilized to model the effects of alternative forest management policies on wildlife habitat in support of the Landscape Guide development. The science team created strategic forest management model simulations using the Patchworks model (Spatial Planning Systems 2008) in order to forecast outcomes of the two management options: the featured wildlife species approach used in previous forest management guides and the coarse and fine filter approach of the Landscape Guide. The technical report *Forest Policy Scenario Analysis: Evaluating the Effectiveness of Coarse-Filter Policy Options on Conserving Forest Songbird Communities* described how a quantitative ranking was given to each alternative set of forest management policy options. The options were evaluated in terms of how close the songbird community responded to forests arising from various option-sets (scenarios) relative to the simulated natural forest. This ranking provided input into the overall decision making process for the development of Landscape Guide indicators.

Spatial strategic models, such as the Patchworks harvest scheduling model and the Boreal Forest Landscape Dynamics Simulator (BFOLDS), were used in the preparation of 2009 FMPs for the Nipissing and Romeo Malette Forests, which were under development during the 2007/08 fiscal year. The application of spatial models revealed a number of data, process and policy challenges. As a result the MNR's direction for modelling in forest management planning is evolving to facilitate the use of spatial models and the incorporation of spatial objectives into non-spatial models. The MNR's proposed FMPM 2009 revision provides additional direction for the use of spatial strategic models in forest management planning, and requires consideration of spatial conditions when developing management strategies (whether spatial or non-spatial models are used).

Ecological Land Classification Program

The Ecological Land Classification (ELC) program, formerly the Forest Ecosystem Classification Program, is mandated with the establishment of a comprehensive and consistent province-wide framework for ecosystem description, inventory and interpretation. The ELC mandate is derived from Term and Condition 97 of the original Forest EA Approval, which directed the MNR to continue work on the development and delivery of ecosystem classification manuals and inventory approaches across the Area of Undertaking (AOU). The MNR is required to continue the development of the ELC program in accordance with Condition 41.

In 2007/08, work continued on the development of the ELC program. The following classification tools and reports were developed and distributed to MNR and forest industry staff:

- Ecoregions of Ontario – draft;
- Ecodistrict fact sheets – first draft;
- Ecosites of Ontario – Version 2; and
- Training and support materials.

Significant progress has been made in the delivery of the ELC program through improvements in inventory and mapping technology. The program has supported the development of the enhanced FRI program through:

- New aerial photo interpretation manuals;
- Contributions to ground calibration and permanent plot data collection methods; and
- Training of aerial photo interpretation staff and ground calibration data collection crews.

Technology transfer and training were emphasized during the reporting period and will continue to be an important component of the program. Training courses have been provided to MNR staff and partners across the province. Basic ELC skills and specialized curricula were delivered for a wide range of audiences. Special emphasis was directed to the delivery of new ELC tools and formats for the enhanced FRI program, including training of photo interpretation staff, external consultants involved in field calibration, and forest industry partners.

Growth and Yield

Measuring and predicting how trees and forests grow is the science of growth and yield. The Growth and Yield program in Ontario is actively involved in a wide range of activities: from the collection of field data and information, to the creation of new models, guidelines, and monitoring procedures. Results from this program are extensively utilized in forest management planning and help guide the determination of the sustainable harvest area. The program also plays a key role in shaping the models and tools used to forecast the growth and development of Ontario's forests. The core element of this program is an extensive network of permanent sample plots on which the growth and status of individual trees is tracked through time. Data collected from these plots provides information on forest growth and yield as influenced by site, forest structure, silvicultural treatments and natural events.

Growth and yield field research work

In 2007/08, a research project was undertaken to develop a taper equation model for plantation-grown jack pine and black spruce. A total of 25 jack pine and black spruce plantations of different densities were examined throughout northern Ontario. From each site, 45-48 trees were cut into sections for stem analysis work. The resulting taper equation

will allow forest managers to account more accurately for tree shapes in a plantation setting when estimating individual tree volumes and product yields.

An ongoing partnership with the Forest Ecosystem Science Co-operative, Growth and Yield Science Unit (Forest Co-op GYSU), facilitated the implementation of an extensive field program throughout the AOU. Since the development of the Permanent Growth Plot program in 1999, Forest Co-op GYSU has established more than 2,500 permanent growth plots for data collection and analysis. Since 2002, 1,397 of these plots have been remeasured. In 2007, Forest Co-op GYSU undertook an extensive upgrade of the tools and procedures used to manage and maintain its permanent growth plot data in order to improve consistency.

During 2007/08, 60 new permanent growth plots were established in under-represented forest conditions throughout the AOU and approximately 471 plots were remeasured. An additional 23 plots were sampled as part of the MNR's Growth and Yield program. This wealth of data was incorporated into improved yield curves and growth projections for Ontario's forests and resulted in the publication of numerous peer-reviewed journal articles. Data is fuel for innovation, and this growing body of locally derived growth and yield science lends further support to the MNR's mission of ecological sustainability; it improves our ability to predict future forest composition and structure.

Ontario continued its participation in a long-term monitoring program with the Canadian Forest Service. This project, known as the National Forest Inventory (NFI), involves the establishment and remeasurement of ground and photo-based monitoring plots, on a systematic grid, throughout Ontario. In 2007, the MNR remeasured nine ground plots and committed to establishing close to 1,000 additional plots on the NFI grid. This plot network will be developed incrementally over the next ten years. While this data is contributing to existing modelling initiatives, its primary value will be in providing an independent and unbiased assessment of both the extent and condition of Ontario's forest estate.

Full-tree Harvest and Full-tree Chipping Studies

During the 1988-1992 EA hearing, concerns were raised about the effects of the full-tree logging method on sites with shallow soils, particularly nutrient losses and the associated effects on forest productivity. Term and Condition 101 of the original Forest EA Approval required the MNR to design and implement a study to address the effects of full-tree harvest and full-tree chipping on long-term forest productivity. The MNR's Timber Class EA Review (2002) reported on progress in the MNR's 20-year scientific research study that was initiated

in 1994. The study examined harvest-related nutrient removal on sites with shallow and coarse-textured soils for the black spruce forest types. A companion study, headed by the Canadian Forest Service, was conducted on jack pine.

Field and laboratory work on MNR's black spruce project focused on the 10-year measurement for nine sites that were experimentally harvested between 1994 and 1995. The measurements were designed to quantify changes in soil properties resulting from the harvest treatments over the range of site types, including physical, chemical and biological properties. In addition, seedling growth and nutrition measurements were taken to examine trends in early seedling performance.

In 2007/08, efforts were directed to data analysis, presentations and publications that described the preliminary results of the study. The preliminary results suggest that shallow-soiled site types were not as sensitive to productivity loss following full-tree harvest as previously anticipated, and that ecological stability could be maintained with appropriate harvest rotations. Additional monitoring is required to verify that the growth trajectories for the applied harvest treatments, which currently are not significantly different for tree length versus full tree harvest methods, continue over the long-term. The project team plans to initiate 15-year re-measurements of the nine sites.

Wildlife Population Monitoring

Provincial wildlife population monitoring is undertaken to determine if healthy populations of forest wildlife continue to be found across the AOU and to contribute to an understanding of how forest management affects wildlife populations. The wildlife population monitoring program was reaffirmed through the EA Declaration Order as Condition 30.

The MNR conducted a forest bird status report from bird monitoring surveys, Bird Studies Canada, and the Ontario Bird Breeding Atlas. The purpose of the exercise was to report on the status of forest birds and assess the reliability of trend data across the AOU. The exercise concluded that status results were reliable for southern and central Ontario, but were not reliable for most bird species in northern Ontario due to the limited number of volunteer partners relative to the size of northern Ontario. The MNR is currently investigating other survey methods that may improve the overall reliability of the survey results for northern Ontario. The results of the forest bird status report were presented at a Forest Bird and Forest Management Workshop.

Bull moose

During 2007/08, a number of initiatives addressed technology transfer of the results of the Provincial Wildlife Population Monitoring Program. A draft technical report of the small mammal component of the three-year pilot study (2002-2004) was prepared for review. Regular updates on the implementation of the program were provided to the Provincial Forest Technical Committee over the report period.

The MNR is currently working with a multi-disciplinary research team to examine factors affecting the distribution and abundance of moose in their southern range with a special emphasis on mixed-wood forests in south-central Ontario. In total, 91 adult females and 38 calves (ranging from four hours to four weeks old) have been captured, collared and closely monitored since the beginning of 2006. All moose monitored in the study were captured in Algonquin Park and Wildlife Management Unit 49 (west of Algonquin). Several objectives were established, including examining the roles of predation and hunting on calf survival, the effects of climate change on moose population, the importance of habitat fragmentation, and the effectiveness of the moose harvest and moose habitat models. Research was ongoing through 2007/08 for this study.

Water Crossing Review Protocol

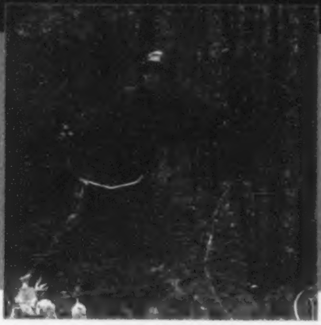
In 2000, the MNR initiated the Forest Roads and Water Crossing Initiative to review the planning, construction and maintenance of water crossings, in response to concerns about the status and condition of water crossing infrastructure on Crown lands. As a result, the *Protocol for Review of Water Crossings Proposed through the Forest Management Planning Process* was released in 2005. The MNR and forest industry staff were directed to use the protocol for the review and approval of water crossings in annual work schedules. In 2007/08, a review of the application of the protocol was undertaken to assess the effectiveness of:

- The protocol as an office tool;
- The decisions resulting from use of the protocol; and
- Best management practices and mitigation measures.

The protocol is currently being revised, The MNR plans to have the final protocol in place in 2009 to be used in the review of water crossings proposed in the 2010/11 annual work schedules.

Bridge inspection on forest access road

11. Aboriginal Peoples



Condition 34 of the Declaration Order regarding the MNR's Class Environmental Assessment Approval for Forest Management in Ontario requires the MNR district managers to conduct negotiations at the local level with Aboriginal peoples whose communities are situated in a management unit. These negotiations are to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through the forest management planning process. The negotiations include but are not limited to the following matters:

a) Providing job opportunities and income associated with forest and mill operations in the vicinity of Aboriginal communities;

b) Supplying wood fibre to wood processing facilities (such as sawmills) in Aboriginal communities;

c) Facilitation of Aboriginal third-party licence negotiations with existing licensees where opportunities exist;

d) Providing forest resource licences to Aboriginal people where unallocated Crown timber exists close to reserves;

e) Development of programs to provide jobs, training and income for Aboriginal people in forest management operations through joint projects with Indian and Northern Affairs Canada; and

f) Identifying other forest resources that may be affected by forest management or which can be addressed in the forest management planning process.

In addition, this chapter also reports on some of the forums for aboriginal community involvement in the forest management process. For the purposes of this Chapter, use of the term "Aboriginal" will be used to include references to "First Nations" and "Native" as per the definition in the Canadian Constitution 35(2), unless quoted directly from a source or in the use of a proper name.

A list of the aboriginal communities situated within each district, or having an interest in forest management units within a district, is summarized in Table 11a.

Table 11a – Summary of Aboriginal communities in each district within the AOU

District	Aboriginal Communities
Algonquin Park	Antoine Algonquins, Mattawa/North Bay Algonquins, Bonnechere Algonquin First Nation, Whitney Algonquins, Algonquins of Greater Golden Lake, Algonquins of Pikwakanagan First Nation (Golden Lake), Snimikobi (Ardoch) Algonquin First Nation, Algonquin Nation Kijicho Manito (Bancroft)
Bancroft, Kemptville & Peterborough	Whitney Algonquins, Snimikobi (Ardoch) Algonquin First Nation, Alderville First Nation, Curve Lake First Nation, Mohawks of the Bay of Quinte, Ojibways of Hiawatha First Nation, Algonquins of Pikwakanagan First Nation (Golden Lake), Shabot Obaadjiwan First Nation
Chapleau	Brunswick House First Nation, Chapleau Cree First Nation, Chapleau Ojibwe First Nation, Mattagami First Nation, Michipicoten First Nation, Missanabie Cree First Nation, Flying Post First Nation, Mississauga #8 First Nation, Sagamok Anishnawbek First Nation, Serpent River First Nation
Cochrane	Moose Cree First Nation, Wahgoshig First Nation, Taykwa Tagamou Nation, Mattagami First Nation, Matachewan First Nation, Flying Post First Nation
Dryden	Aboriginal People of Wabigoon, Eagle Lake First Nation, Lac Des Mille Lacs First Nation, Lac Seul First Nation, Ojibway Nation of Saugeen, Wabauskang First Nation, Wabigoon First Nation, Naotkamegwanning Anishinabe First Nation (Whitefish Bay).
Fort Frances	Big Grassy First Nation, Couchiching First Nation, Lac La Croix First Nation, Rainy River First Nation, Naicatchewenin First Nation, Seine River First Nation, Stanjikoming First Nation, Nigigoonsiminikaaning First Nation, Anishinaabeg of Naongashiing, Naotkamegwanning Anishinabe (Whitefish Bay), Ojibways of Onigaming (Sabaskong), Lac Des Mille Lacs First Nation, Wabigoon First Nation
Hearst	Constance Lake First Nation, Hornepayne First Nation, Taykwa Tagamou Nation, Moose Cree First Nation
Kenora	Big Grassy First Nation, Wabauskang First Nation, Grassy Narrows First Nation, Iskatewizaagegan No. 39 Independent First Nation, Wabaseemoong Independent Nations, Obashkaandagaang (Washagamis Bay), Ochiichagwe'Babigo'ining First Nation (Dalles), Wauzhushk Onigum First Nation (Rat Portage), Shoal Lake No. 40 First Nation, Northwest Angle No. 33 First Nation, Northwest Angle No. 37 First Nation, Anishinaabeg of Naongashiing, Ojibways of Onigaming (Sabaskong), Naotkamegwanning Anishinabe (Whitefish Bay)

District	Aboriginal Communities
Kirkland Lake	Wahgoshig First Nation, Matachewan First Nation, Beaverhouse First Nation
Nipigon	Biinjitiwaabik Zaaging Anishinaabek First Nation (Rocky Bay), Kiashke Zaaging Anishinaabek First Nation (Gull Bay), Red Rock Indian Band, Bingwi Neyaashi Anishinaabek, Fort William First Nation, Whitesand First Nation, Namaygoosisagagun (Community of Collins), Animbiigoo Zaagi'igan Anishinaabek First Nation (Lake Nipigon Ojibway), Aroland First Nation, Long Lake #58 First Nation, Ginoogaming First Nation (Long Lac #77), Constance Lake First Nation, Pays Plat First Nation, Poplar Point First Nation, Eabametoong First Nation, Marten Falls First Nation, Ojibways of Pic River (Heron Bay)
North Bay	Temagami First Nation, Nipissing First Nation, Dokis First Nation, Antoine Algonquins, Mattawa/North Bay Algonquins, Matachewan First Nation
Parry Sound	Wasauksing First Nation (Parry Island), Henvey Inlet First Nation, Shawanaga First Nation, Magnetawan First Nation, Dokis First Nation, Wahta Mohawks, Moose Deer Point First Nation
Pembroke	Algonquins of Pikwakanagan First Nation (Golden Lake), Bonnechere Algonquin First Nation, Antoine Algonquins, Mattawa/North Bay Algonquins
Red Lake	Pikangikum First Nation, Lac Seul First Nation, Cat Lake First Nation, Wabauskang First Nation, Slate Falls First Nation, Grassy Narrows First Nation, First Nation people living off reserves in the communities of Red Lake and Ear Falls
Sault Ste. Marie	Serpent River First Nation, Ojibways of Garden River, Mississauga #8 First Nation, Thessalon First Nation, Ojibways of Batchewana, Sagamok Anishnawbek First Nation, Métis Nation of Ontario, Michipicoten First Nation
Sioux Lookout	Mishkeegogamang First Nation, Lac Seul First Nation, Cat Lake First Nation, Ojibway Nation of Saugeen, Slate Falls First Nation
Sudbury	Dokis First Nation, Henvey Inlet First Nation, Mattagami First Nation, Chapleau Ojibwe First Nation, Mississauga #8 First Nation, Sagamok Anishnawbek First Nation, Serpent River First Nation, Temagami First Nation, Wahnapitae First Nation, Whitefish Lake First Nation, Whitefish River First Nation, Wikwemikong Unceded Indian Reserve, Brunswick House First Nation
Thunder Bay	Whitesand First Nation, Namaygoosisagagun (Community of Collins), Lac Des Mille Lacs First Nation, Fort William First Nation, Kiashke Zaaging Anishinaabek First Nation (Gull Bay), Red Rock Indian Band, Métis Nation of Ontario
Timmins	Mattagami First Nation, Flying Post First Nation, Matachewan First Nation, Moose Cree First Nation, Taykwa Tagamou Nation, Wahgoshig First Nation

District	Aboriginal Communities
Wawa	Ojibways of Pic River (Heron Bay), Pic Mobert First Nation, Hornepayne First Nation, Michipicoten First Nation, Missanabie Cree First Nation, Pays Plat First Nation, Long Lake #58 First Nation, Ginoogaming First Nation (Long Lac #77), Constance Lake First Nation

Source: Condition 34 District Reports 2007/08

Implementation of Condition 34

The scope of Condition 34 is broad, and its application and implementation are determined at the local level. The arrangements and agreements put into effect by MNR district managers and Aboriginal communities take different forms, in an effort to accommodate the unique needs, capacities, and situations of individual Aboriginal communities in the context of available opportunities.

In its decision, the Environmental Assessment (EA) Board ordered the MNR to build upon initiatives already underway, and to provide new opportunities for Aboriginal communities to benefit from forest management activities in their local areas. In endeavouring to develop opportunities for Aboriginal communities to benefit, MNR proceeds in implementing Condition 34 in a manner consistent with the Crown Forest Sustainability Act (CFSA). The statute provides legislative authority to the MNR, as well as a framework for the sustainable management and use of forest resources. The CFSA has enabled the MNR to put mechanisms in place that may assist in facilitating the implementation of Condition 34.

While responsibility for implementation of Condition 34 rests with the MNR, the EA Board recognized that the involvement of other parties is critical to successful implementation. Such involvement would include participation of Aboriginal communities, the forest industry, and other government bodies (e.g., Ontario ministries, Indian and Northern Affairs Canada, and Natural Resources Canada). Aboriginal communities may be individually involved in implementation of Condition 34, or as members of groups of communities with common interests situated in a common geographic area.

Participation in forest management and economic development activities is summarized under three categories; access to resources, silvicultural opportunities, and training and development.

District Progress

MNR is required to report a summary of the progress of on-going negotiations with Aboriginal peoples on a district-by-district basis. Of the 26 MNR districts, four are outside the Area of the Undertaking (AOU), including Aylmer, Aurora, Cambridge, and Midhurst. Peterborough and Kemptville districts are only partially included in the AOU. Accordingly, the reporting of Bancroft in this chapter will include parts of Peterborough and Kemptville districts located in the Mazinaw-Lanark Forest.

Highlights of the benefits provided to Aboriginal communities in 2007/08 are presented using the three categories set out above, in the order given. The information used is largely provided in the Condition 34 reports submitted by districts. In some instances there may be further information on benefits for Aboriginal communities that is not reported here.

Access to Resources

Aboriginal people are often in a position to operate as forest harvesters. Although Ontario's wood supply is almost completely allocated to Sustainable Forest Licence (SFL) holders, the MNR has helped the forest industry and Aboriginal communities negotiate access to resources through various mechanisms. For example, harvest opportunities are sometimes made available through overlapping licences issued to Aboriginal communities or community members. Table 11b summarizes resources made available to Aboriginal communities, as reported by each district. Readers should note that information in the table is strictly a summary of districts' submissions; additional opportunities may have occurred.

Table 11b – Aboriginal Access to Resources (As reported by District)

District[1]	Tenure type: Licence / Contract	Estimated Total Allocation (000m^3)	Number of Aboriginal Communities Affected
Algonquin Park	Contract	92.5	3
Bancroft	Harvest approval	n/a	1
Cochrane	Licence	326.6	3
Dryden	Licence	39.0	3
Fort Frances	Contract, Licence	378.0	8
Hearst	Contract, Licence	87.3	2
Kenora	Licence	82.5	3
Kirkland Lake	Contract, Licence	124.5	2
Nipigon	Contract, Licence	675.7	9

District[1]	Tenure type: Licence / Contract	Estimated Total Allocation (000m^3)	Number of Aboriginal Communities Affected
North Bay	Licence	19.9	4
Parry Sound	Licence	n/a	1
Pembroke	Licence	12.5	1
Red Lake	Personal Fuelwood Licence	<0.1	1
Sault Ste. Marie	Conditional Commitment Letter	20.0	2
Sudbury	Licence	33.5	5
Thunder Bay	Licence	270.0	2
Wawa[2]	Contract, Licence	108.0	2

[1] Information was not provided for Chapleau, Sioux Lookout and Timmins Districts.

[2] For the White River Forest in the Wawa District, the wood supply volume (74,272m^3 of the 108, 000m^3) is partially allocated; the remainder is set aside in FMP pending negotiations.

Source: Condition 34 District Reports 2007/08

Silvicultural Opportunities

Forest renewal and tending includes growing nursery stock, planting, seeding, spacing, cleaning, thinning, and site preparation. Many Aboriginal peoples have experience in silvicultural activities. District managers have sought specific agreements between the forest industry and Aboriginal communities to outline the type and scope of silvicultural contract work that can be made available. Other key forest management activities, while not described as silviculture, are included in this section. These activities, such as road construction and maintenance, hauling and information gathering are integral to forest management. These types of work can contribute to an effective economic development program. Table 11c summarizes the availability of such other opportunities to Aboriginal peoples during the 2007/08 fiscal year, as reported by each district.

Table 11c - Aboriginal Access to Silvicultural and Other Opportunities

District[1]	Estimated Value of Contracts / Opportunities (thousands $) Industry	MNR	Number of Communities Affected	Types of Activities
Algonquin Park	186.0	15.5	8	Tree marking, manual cleaning, contracts for nursery seedlings, preparation of Aboriginal Background Information Report
Bancroft	n/a	n/a	1	Tree planting, tree marking
Chapleau	n/a	20.0	1	Water crossing inventory work
Cochrane	n/a	14.3	1	Bridge removal
Dryden	240.0	n/a	1	Purchase of seedlings
Fort Frances	1,437.2	n/a	9	Tree planting, site preparation, thinning, slash management, cone collection, road construction and maintenance
Hearst	131.3	63.9	6	Tree planting, cruising, values collection, road construction
Kenora	25.0	n/a	n/a	Culvert maintenance and beaver removal agreement with local trappers
Kirkland Lake	250.0	n/a	2	Tree planting, thinning
Nipigon	327.0	n/a	5	Tree planting, site preparation, slash management, road maintenance
North Bay	226.8	n/a	3	Tree planting, tending, slash management
Parry Sound	n/a	n/a	3	Tending contracts and deer yard improvements
Pembroke	104.0	5.0	1	Tree marking, tending

District[1]	Estimated Value of Contracts / Opportunities (thousands $)		Number of Communities Affected	Types of Activities
	Industry	MNR		
Red Lake	n/a	n/a	n/a	Potential opportunities for FN trappers re: nuisance beavers
Sault Ste. Marie	n/a	n/a	2	Thinning, cone collection and seedling production
Sudbury	24.5	n/a	3	Water crossing inventory project, tending and seedling production
Thunder Bay	319.5	n/a	3	Tree planting, site preparation
Timmins	n/a	15.0	3	Aboriginal Background Information Report development

[1] Information was not provided for Sioux Lookout and Wawa Districts

Source: Condition 34 District Reports 2007/08

Training and Employment

District managers have found ways to help co-ordinate existing federal and provincial programs to assist Aboriginal communities in preparing for increased participation in forest management activities.

In some districts, the forest industry provides the training strategy, recruitment and hiring support, and business opportunities for independent contractors. In some instances the MNR helps to establish Aboriginal training centres by providing facilities, equipment and leadership. For many years the MNR districts have provided opportunities for joint projects with Aboriginal peoples by providing training, funding, facilities, and equipment. The following paragraphs summarize the highlights of training opportunities provided to Aboriginal communities by the MNR and the forest industry in accordance with the Condition 34 District Reports, noting relevant districts as appropriate.

Summary of Training Initiatives – 2007/08

A range of forest-related training and development initiatives were provided for the benefit of Aboriginal people. Opportunities were presented in a few larger, comprehensive programs, as well as in a multitude of local and focused offerings. Both the MNR and the industry made significant support to training.

The MNR's Aboriginal Youth Work Exchange Program (AYWEP) and the First Nations Natural Resources Youth Employment Program (often referred to as the First Nations Ranger Program) are examples of larger, comprehensive training programs. Through the AYWEP, at least 4 districts arranged (typically) 8 week summer employment for 2 Aboriginal youth (Thunder Bay, Chapleau, Kirkland Lake, and Sault Ste. Marie). AYWEP work placements focus on resource management projects, job skills readiness training and personal development training.

The First Nations Natural Resources Youth Employment Program (First Nations Ranger Program) is largely centered at Camp Firesteel, west of Upsala. The 6 week program employed 26 youth and 5 crew leaders in training from 14 First Nations (Dryden, Hearst, Thunder Bay, Timmins, and Sioux Lookout). The program is administered by Confederation College and has received support from MNR, other ministries and agencies (Canada, Ontario and aboriginal organizations) as well as a number of industry partners.

These programs focused on youth, a prominent emphasis in the training and development activity conducted. Key industry partners such as AbitibiBowater, Domtar and Tembec are actively engaged in support for youth (and other) training. Industry members often have policies and agreements to document their ongoing commitment to youth training and education.

The most common training received (with a specific focus) is MNR's Forest Management Planning workshops. Various workshops are offered to all planning teams at appropriate intervals in the FMP development process. As more Aboriginal people join planning teams, the benefits of this program are reaching more communities. Aboriginal members were included in FMP training workshops in many districts (including Fort Frances, Kirkland Lake, Nipigon, North Bay and Red Lake). Other examples of youth training are seen in MNR and industry support for the Algonquin Earthwalker Program (modelled on the Ontario Stewardship Rangers program; Pembroke), MNR support for a summer program employing Pikangikum youth (Red Lake), MNR hosting of a Natural Resource Career Day at local high schools serving Aboriginal students (Kenora) and MNR participation at a career fair for Aboriginal youth (Kirkland Lake).

The MNR also offered or supported many other training initiatives. Some examples included:

- Support for an Aboriginal individual taking Ecological Land Classification training (Bancroft);
- Training on land dispositions and "Mineral Exploration/Development and local First Nation communities" (Chapleau);
- Sponsoring an individual for a 1 week G.I.S. course (Kirkland Lake);
- Tree plant foreman training (Nipigon); and
- Education on trapline reallocation process (Timmins).

Industry members have also supported a range of focused training initiatives:

- The Algonquin Forestry Authority (together with the MNR) advises communities of training opportunities, and offers to sponsor 1-2 individuals from each community (Algonquin Park);
- Training on Forest Operations Prescriptions interpretation to support tree-marking skills development (Bancroft);
- Support for a 5 week construction training program and a saw filing course (Cochrane);
- Training for community members in road construction and forestry (Sioux Lookout); and
- Bi-annual meetings to get community members trained and certification for forestry operations (Parry Sound).

Pre-commercial thinning in jack pine stand

Aboriginal Employment in the Forest Industry

Although reporting on employment of Aboriginals in the forest industry is not a requirement of Condition 34, some information on Aboriginal employment adds to a more comprehensive understanding of forest management benefits accruing to Aboriginals. In 2007/08, participation levels of Aboriginal people working in all aspects of forest management varied. It is clear from district information that Aboriginal people were engaged in harvesting, as well as various silvicultural and other activities. Aboriginal people were also employed at forest resource processing facilities (mills).

The characteristics of Aboriginal employment in the forest industry vary widely. While some work is 'permanent' full-time, much of the employment opportunities are seasonal or part time, simply by the nature of the work. Work relationships also vary, from individuals serving as regular employees of forest industry businesses (e.g. mill workers), to self-employed individuals performing tasks on a casual, intermittent basis (e.g. road and culvert maintenance). Business entities established may be affiliated directly with Aboriginal communities, may be run by individuals who are members of an Aboriginal community, or may be operated by non-Aboriginal parties.

Summary of Aboriginal Employment in the Forest Industry - 2007/08

Mill employment

- 30-50 Aboriginal people were employed at Bowater's sawmill at the Fort William First Nation (Thunder Bay);
- Tembec employed 3 individuals at the Kapuskasing mill complex (Hearst);
- Employment opportunities have been provided in the Weyerhaeuser iLevel mill (Kenora);
- 80% of the work force in Long Lake Forest Products came from Aboriginal communities (Nipigon);
- Approximately 25% of the workforce at the Hudson sawmill was of Aboriginal heritage (Sioux Lookout); and
- Members from Aboriginal communities worked for Haavaldsrud Timber in Hornepayne (Wawa).

Forest harvesting employment:

- A community affiliated business harvested 92,500 cubic metres (Algonquin Park);
- 88,042 cubic metres were harvested by two communities from an allocation on the Iroquois Falls Forest (Cochrane);
- Through operations associated with 3 Aboriginal communities, 39,025 cubic metres were harvested on the Dryden and Wabigoon Forests through overlapping licences (Dryden);
- Approximately 378,000 cubic metres on the Crossroute Forest were made available for harvest by parties affiliated with eight (8) Aboriginal communities. Harvest was conducted on almost all allocated blocks (Fort Frances);
- Three communities harvested 19,898 cubic metres that was allocated for them on the Nipissing Forest (North Bay); and
- A company linked to five Aboriginal communities was given a harvest approval for 33,500 cubic metres on the Sudbury Forest (Sudbury).

Silviculture and Other employment:

- Members of a community conducted tree planting and tree marking on the Mazinaw-Lanark Forest. The community has 5 certified tree markers (Bancroft);
- An Aboriginal-affiliated corporation undertook a water crossing inventory project on the Martel and Spanish Forests (Chapleau, Sudbury);
- An industry member on the Hearst Forest hired seven Aboriginal individuals to do silvicultural work (Hearst);
- The SFL holder on the Timiskaming Forest awarded five contracts to Aboriginal communities and individuals for tree planting and pre-commercial thinning, providing work for about 23-33 people (Kirkland Lake);
- Two communities had a number of contracts to release white pine using brush saws and herbicide applicators (Parry Sound);
- Tree marking and tending contracts were carried out by a community on the Ottawa Valley Forest (Pembroke); and
- A community produced seedlings for planting on the Northshore and Sudbury Forests (Sudbury, Sault Ste. Marie).

In addition, districts indicated that Aboriginal people were engaged in, among other work activities, hauling of forest products, road construction and maintenance, slash management, site preparation, values collection and compliance.

Although reporting of Aboriginal employment is not required by Condition 34, districts have made some effort to include data on Aboriginal employment to the extent possible. Districts are in many cases able to report or estimate how many individuals are engaged in particular activities or contracts, but typically do not have access to information on employment numbers in other activities. Some districts have been able to provide estimates of total numbers of Aboriginal people employed by the industry in the district; some of these estimates exceeded 100 people per district. However, in many instances, data is incomplete on the overall numbers of Aboriginal people engaged in work in the forest industry. When this occurs, MNR districts have included statements in the condition 34 reports that the information is not readily available.

Role in Planning and Management

In addition to the negotiations to identify and implement ways of achieving a more equal participation by Aboriginal peoples in the benefits provided through the forest management planning process, MNR districts have sought out effective forums for Aboriginal communities to have a greater say in the planning and management of nearby forest resources. Forest Management Plans (FMPs) include a detailed Aboriginal Background Information Report and maps of Aboriginal Values. The Aboriginal Background Information Report summarizes the locations of natural resource features, land uses and values of interest to the Aboriginal communities, and forest management-related concerns of the communities. Districts have provided financial assistance to some communities either to prepare these components themselves or to hire outside contractors.

In many districts Aboriginal peoples are represented, together with industry and government, on forest management planning teams. Aboriginal members also often serve on local citizens committees (LCC). Table 11d summarizes Aboriginal involvement in forest management planning for each district. Readers should note that the numbers in the columns relating to Aboriginal community representation on LCCs and planning teams reflect each instance that a particular community has a member on a particular Committee or team. In some cases specific communities are represented on more than one LCC or planning team in a district; when situation like this occurs, they are counted separately in this report.

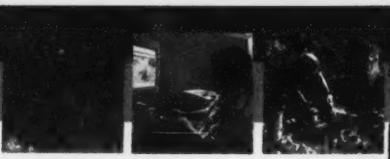
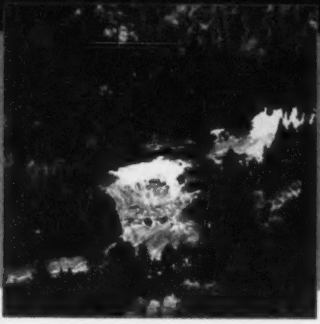


Table 11d – Aboriginal Engagement in Forest Management Planning Processes

District	Aboriginal Communities Represented on LCCs		Aboriginal Communities Represented on Planning Teams		Aboriginal Background Information Reports on File for a Forest
	Active Member	Non-active Member	Active Member	Non-active Member	
Algonquin Park	2	0	8	0	3
Bancroft	2	1	1	0	3
Chapleau	0	2	9	3	12
Cochrane	2	1	2	1	6
Dryden	1	0	4	0	11
Fort Frances	2	0	2	0	12
Hearst	0	0	1	0	4
Kenora	1	0	2	0	14
Kirkland Lake	3	1	3	1	5
Nipigon	5	2	7	3	17
North Bay	6	0	6	0	6
Parry Sound	1	0	2	0	5
Pembroke	0	0	4	4	4
Red Lake	0	0	2	0	7
Sault Ste. Marie	0	0	2	0	6
Sioux Lookout	0	0	1	0	5
Sudbury	1	2	6	11	8
Thunder Bay	7	1	3	0	7
Timmins	4	0	11	3	9
Wawa	7	1	7	3	11

Source: Condition 34 District Reports 2007/08

Appendices



1 - Key to Management Units

2 - Forest Management Plans Approved for Implementation

3 - Forest Renewal Charges – 2007/08

4 - Forest-dependent Communities in Ontario

5 - Acronyms Used in this Report

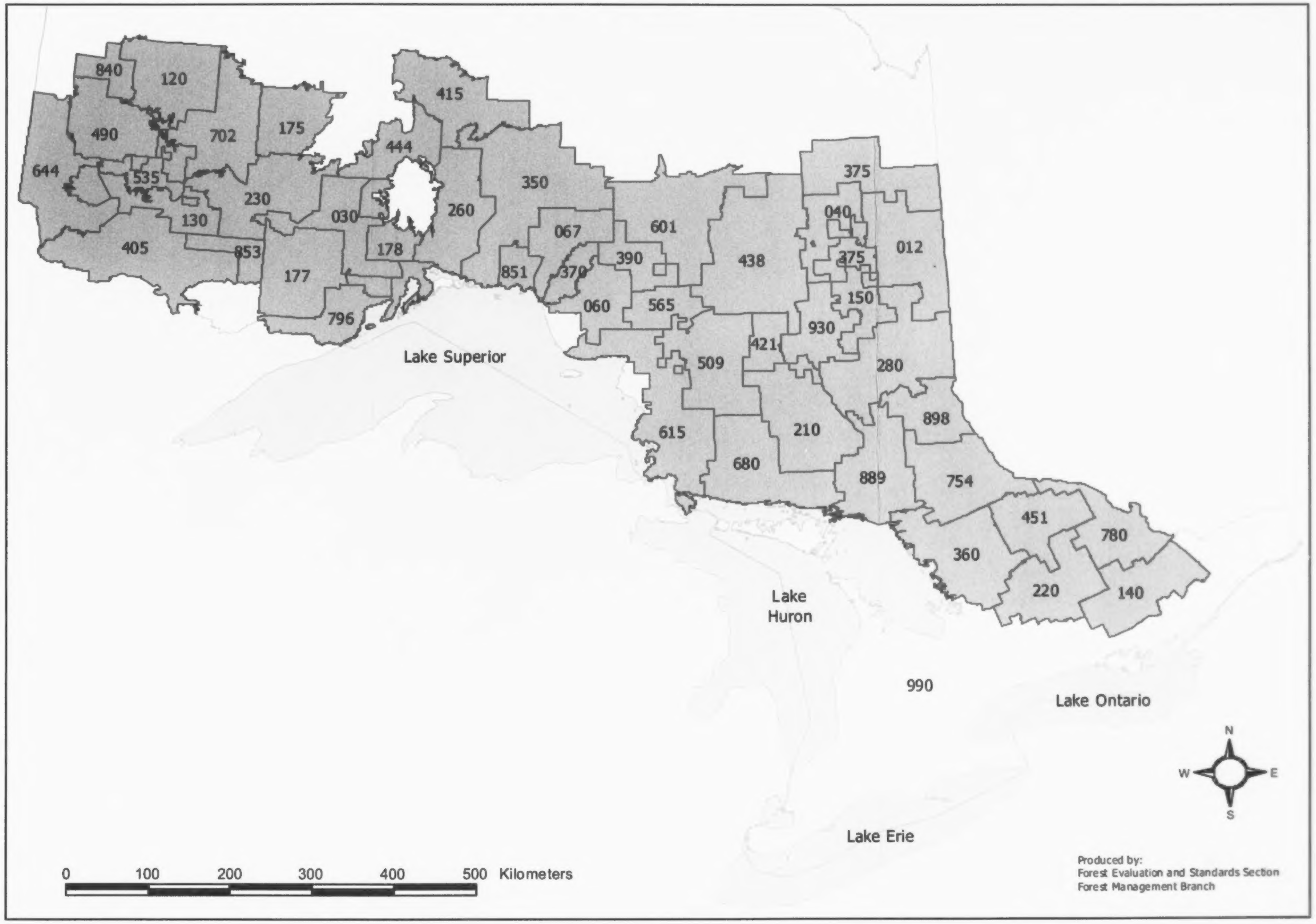
6 - Documents Referenced in this Report

Appendix 1 - Key to Management Units (April 1, 2007)

(Designated under the Crown Forest Sustainability Act, Section 7)

MU #	MU Name	Status	Lead District
444	Armstrong Forest	SFL	Thunder Bay
178	Black Sturgeon Forest	SFL	Nipigon
175	Caribou Forest	SFL	Sioux Lookout
405	Crossroute Forest	SFL	Fort Frances
177	Dog River-Matawin Forest	SFL	Thunder Bay
535	Dryden Forest	SFL	Dryden
230	English River Forest	SFL	Dryden
350	Kenogami Forest	SFL	Nipigon
644	Kenora Forest	SFL	Kenora
702	Lac Seul Forest	SFL	Sioux Lookout
260	Lake Nipigon Forest	SFL	Nipigon
796	Lakehead Forest	SFL	Thunder Bay
415	Ogoki Forest	SFL	Nipigon
851	Pic River Ojibway Forest	SFL	Nipigon
840	Red Lake Forest	SFL	Red Lake
853	Sapawe Forest	SFL	Fort Frances
030	Spruce River Forest	SFL	Thunder Bay
120	Trout Lake Forest	SFL	Red Lake
130	Wabigoon Forest	SFL	Dryden
490	Whiskey Jack Forest	SFL	Kenora
615	Algoma Forest	SFL	Sault Ste. Marie
067	Big Pic Forest	SFL	Wawa
370	Black River Forest	SFL	Wawa
375	Cochrane-Moose River	CR	Cochrane
438	Gordon Cosens Forest	SFL	Hearst
601	Hearst Forest	SFL	Hearst
012	Iroquois Falls Forest	SFL	Cochrane
565	Magpie Forest	SFL	Wawa
509	Martel Forest	SFL	Chapleau
390	Nagagami Forest	SFL	Wawa
150	Nighthawk Forest	SFL	Timmins
754	Nipissing Forest	SFL	North Bay
680	Northshore Forest	SFL	Sault Ste. Marie
421	Pineland Forest	SFL	Chapleau
930	Romeo Malette Forest	SFL	Timmins
040	Smooth Rock Falls Forest	SFL	Cochrane
210	Spanish Forest	SFL	Sudbury
889	Sudbury Forest	SFL	Sudbury
898	Temagami	CR	North Bay
280	Timiskaming Forest	SFL	Kirkland Lake
060	White River Forest	SFL	Wawa
451	Algonquin Park Forest	AFA	Algonquin Park
220	Bancroft-Minden Forest	SFL	Bancroft
360	French-Severn Forest	SFL	Parry Sound
140	Mazinaw-Lanark Forest	SFL	Bancroft
780	Ottawa Valley Forest	SFL	Pembroke
990	Southern Ontario		various

Status:		
	SFL	Sustainable Forest Licence
	CR	Crown Managed
	AFA	Algonquin Forest Authority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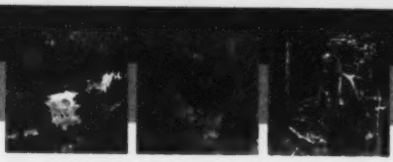
Forest Management Branch



Appendix 2 - Forest Management Plans Approved for Implementation in 2007, 2008, 2009 and Plans Scheduled for Approval and Implementation in 2010 and 2011

MU #	MU Name (current)	Lead District	Region
Plans Approved for Implementation in 2007			
067	Big Pic Forest	Wawa	NE
175	Caribou Forest	Sioux Lookout	NW
405	Crossroute Forest	Fort Frances	NW
601	Hearst Forest	Hearst	NE
796	Lakehead Forest	Thunder Bay	NW
930	Romeo Malette Forest	Timmins	NE
Note: A 2-year contingency plan was prepared for the Romeo Malette Forest (930). A 1 year contingency plan was prepared for the Caribou Forest (175).			
Plans Approved for Implementation in 2008			
175	Caribou Forest	Sioux Lookout	NW
375	Cochrane-Moose River	Cochrane	NE
150	Nighthawk Forest	Timmins	NE
415	Ogoki Forest	Nipigon	NW
840	Red Lake Forest	Red Lake	NW
130	Wabigoon Forest	Dryden	NW
060	White River Forest	Wawa	NE
Note: A 2-year contingency plan was prepared for the Cochrane-Moose River Forest (375).			
Plans Approved for Implementation in 2009			
177	Dog River-Matawin Forest	Thunder Bay	NW
230	English River Forest	Dryden	NW
360	French-Severn Forest	Parry Sound	S
565	Magpie Forest	Wawa	NE
754	Nipissing Forest	North Bay	NE
930	Romeo Malette Forest	Timmins	NE
898	Temagami	North Bay	NE
120	Trout Lake Forest	Red Lake	NW
490	Whiskey Jack Forest	Kenora	NW
Note: A 3-year contingency plan is being prepared for the Whiskeyjack Forest (490). The Dog River-Matawin Forest (177) Plan was renewed 1 year early.			
Plans Scheduled for Implementation in 2010.			
615	Algoma Forest	Sault Ste. Marie	NE
451	Algonquin Park Forest	Algonquin Park	S
444	Armstrong Forest	Thunder Bay	NW
375	Cochrane-Moose River	Cochrane	NE
438	Gordon Cosens Forest	Hearst	NE
012	Iroquois Falls Forest	Cochrane	NE
350	Kenogami Forest	Nipigon	NW
680	Northshore Forest	Sault Ste. Marie	NE
853	Sapawe Forest	Fort Frances	NW
040	Smooth Rock Falls Forest	Cochrane	NE
210	Spanish Forest	Sudbury	NE
889	Sudbury Forest	Sudbury	NE
Note: The Armstrong (444) and Lake Nipigon (260) Forests are proposed to be amalgamated into the Lake Nipigon (815) Forest in 2011. The Iroquois Falls (012) Forest, Cochrane-Moose River (375) Forest, Nighthawk (150) Forest and Smooth Rock Falls (040) Forest are proposed to be amalgamated into the Cochrane Area (110) Forest in 2010. A 1 year contingency plan has been prepared for the Kenogami (350) Forest.			
Plans Scheduled for Implementation in 2011			
220	Bancroft-Minden Forest	Bancroft	S
370	Black River Forest	Wawa	NE
178	Black Sturgeon Forest	Nipigon	NW
535	Dryden Forest	Dryden	NW
350	Kenogami Forest	Nipigon	NW
644	Kenora Forest	Kenora	NW
702	Lac Seul Forest	Sioux Lookout	NW
260	Lake Nipigon Forest	Nipigon	NW
509	Martel Forest	Chapleau	NE
140	Mazinaw-Lanark Forest	Bancroft	S
390	Nagagami Forest	Wawa	NE
780	Ottawa Valley Forest	Pembroke	S
851	Pic River Ojibway Forest	Nipigon	NW
421	Pineland Forest	Chapleau	NE
030	Spruce River Forest	Thunder Bay	NW
280	Timiskaming Forest	Kirkland Lake	NE
Note: Black River (370) and Pic River Ojibway (851) Forests are proposed to be amalgamated into the Pic River (965) Forest in 2011. The Black Sturgeon (178) and Spruce River (030) Forests are proposed to be amalgamated into the Black Spruce (035) Forest in 2011. The Armstrong (444) and Lake Nipigon (260) Forests are proposed to be amalgamated into the Lake Nipigon (815) Forest in 2011.			

Appendix 3 - Forest Renewal Charges for 2007/08 ($ per cubic metre)

		Rates Charged by Tree Species or Groups of Species							
MNR Region	Management Unit Name	White & Red Pine Category 1	White & Red Pine Category 2	Hemlock & Cedar	Spruce / Jack Pine / Balsam Fir / Larch	Poplar	White Birch	Hardwood Grade 1	Hardwood Grade 2
Northwest	Armstrong Forest	5.00	5.00	5.00	5.00	1.00	1.00	1.00	1.00
	Black Sturgeon Forest	11.00	11.00	6.00	6.00	-	-	8.00	1.50
	Caribou Forest	11.00	11.00	3.00	0.50	0.50	0.50	8.00	1.50
	Crossroute Forest	8.00	8.00	-	4.65	0.62	0.62	1.50	0.50
	Dog River - Matawin Forest	11.00	11.00	4.50	3.00	-	-	8.00	1.50
	Dryden Forest	4.00	4.00	4.00	4.00	0.75	0.75	2.00	0.75
	English River Forest								
	Apr. 1, 2007 - Apr. 30, 2007	11.00	11.00	6.00	4.00	0.75	0.75	8.00	1.50
	May 1, 2007 - Mar. 31, 2008	11.00	11.00	6.00	1.50	-	-	8.00	1.50
	Kenogami Forest	11.00	11.00	4.50	4.50	0.50	0.50	1.00	1.00
	Kenora Forest	5.00	5.00	3.00	3.00	0.50	0.50	8.00	1.50
	Lac Seul Forest	11.00	11.00	2.00	2.00	1.00	1.00	8.00	1.50
	Lake Nipigon Forest	3.75	3.75	3.75	3.75	0.50	0.50	8.00	1.50
	Lakehead Forest	6.00	6.00	1.00	6.00	1.00	1.00	1.00	1.00
	Ogoki Forest	11.00	11.00	6.00	7.00	1.00	1.00	8.00	1.50
	Pic River Ojibway Forest	11.00	11.00	2.00	2.00	0.50	0.50	8.00	1.50
	Red Lake Forest	6.00	6.00	3.50	2.50	0.50	0.50	8.00	1.50
	Sapawe Forest								
	Apr. 1, 2007 - Jul. 31, 2007	6.00	6.00	2.00	6.00	0.50	0.50	8.00	1.50
	Aug. 1, 2007 - Mar. 31, 2008	6.00	6.00	2.00	3.00	0.50	0.50	8.00	1.50
	Spruce River Forest	5.00	5.00	5.00	5.00	1.00	1.00	1.00	1.00
	Trout Lake Forest	11.00	11.00	2.75	2.75	0.25	0.25	8.00	1.50
	Wabigoon Forest	11.00	11.00	1.00	1.75	0.25	0.25	0.25	0.25
	Whiskey Jack Forest	11.00	11.00	5.00	5.00	1.40	1.40	8.00	1.50
Northeast	Algoma Forest	5.12	5.12	0.80	3.33	0.32	0.32	4.00	0.64
	Big Pic Forest								
	Apr. 1,2007 - Jul. 31,2007	11.00	6.00	3.00	3.00	0.50	0.50	8.00	1.50
	Aug. 1,2007 - Mar. 31,2008	11.00	6.00	-	-	0.50	0.50	8.00	1.50
	Black River Forest	11.00	11.00	6.00	0.50	1.00	1.00	8.00	1.50
	Cochrane - Moose River Forest	11.00	6.00	0.50	-	-	-	8.00	1.50
	Nighthawk Forest	4.36	4.36	4.36	4.36	0.50	0.50	0.50	0.50
	Gordon Cosens Forest	11.00	11.00	1.00	4.70	1.10	1.10	8.00	1.50
	Hearst Forest	11.00	11.00	1.00	5.00	1.00	1.00	8.00	1.50
	Iroquois Falls Forest	11.00	11.00	2.00	5.00	0.63	0.63	8.00	1.50
	Magpie Forest	11.00	11.00	0.50	0.50	1.00	1.00	8.00	1.50
	Martel Forest	11.00	11.00	1.00	2.66	0.55	0.55	8.00	1.50
	Nagagami Forest	11.00	11.00	1.00	4.00	0.50	0.50	8.00	1.50
	Nipissing Forest	11.00	6.00	0.50	6.00	0.50	0.50	8.00	1.50
	Northshore Forest	7.25	7.25	0.50	4.00	0.50	0.50	8.00	0.50
	Pineland Forest	11.00	11.00	0.60	4.50	0.60	0.60	8.00	1.50
	Romeo Malette Forest	6.00	6.00	4.30	5.53	1.32	1.32	8.00	1.50
	Smooth Rock Falls Forest	11.00	11.00	0.50	3.34	0.50	0.50	8.00	1.50
	Spanish Forest	10.00	10.00	1.00	4.25	0.50	0.50	8.00	1.50
	Sudbury Forest	10.00	6.00	0.50	5.00	0.50	0.50	8.00	1.50
	Temagami	11.00	6.00	6.00	5.67	0.50	0.50	8.00	1.50
	Timiskaming Forest	11.00	11.00	4.80	3.60	0.38	0.38	8.00	1.50
	White River Forest	11.00	11.00	1.00	4.00	0.50	0.50	8.00	1.50
Southern	Algonquin Park Forest	4.75	4.75	0.10	0.10	0.10	0.10	4.75	0.10
	Bancroft - Minden Forest	11.50	0.05	0.05	0.05	0.05	0.05	8.00	0.05
	French - Severn Forest								
	Apr. 1,2007 - Nov. 30,2007	11.00	2.00	2.00	6.00	2.00	2.00	8.00	1.00
	Dec. 1,2007 - Mar. 31,2008	11.00	2.00	2.00	6.00	1.00	2.00	8.00	1.00
	Mazinaw - Lanark Forest	11.00	2.15	2.15	2.15	2.15	3.00	9.00	3.00
	Ottawa Valley Forest	11.00	2.00	6.00	6.00	1.00	1.00	8.00	2.00
	Southern Ontario	12.50	5.00	6.00	6.00	1.50	1.50	8.00	1.50

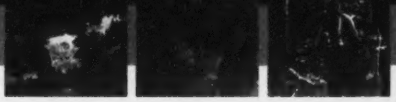
Appendix 4 - Forest-dependent Communities in Ontario (ranked by percentage of forestry workers)

Census Subdivision	Subdivision Type	2006[1] Population	Labour Force	Forestry Workers	Percent Forestry
Dubreuilville	Township	773	450	280	62.2%
James	Township	414	195	90	46.2%
White River	Township	841	580	245	42.2%
Red Rock	Township	1,063	460	190	41.3%
Dorion	Township	379	250	95	38.0%
Hilton	Township	243	55	20	36.4%
Terrace Bay	Township	1,625	805	290	36.0%
Ear Falls	Township	1,153	715	230	32.2%
Constance Lake 92	Reserve	702	220	70	31.8%
Greenstone	Municipality	4,906	2,680	850	31.7%
Smooth Rock Falls	Town	1,473	660	195	29.5%
Mattice-Val Cote	Township	772	375	110	29.3%
Ignace	Township	1,431	780	225	28.8%
Nipigon	Township	1,752	790	215	27.2%
Atikokan	Township	3,293	1,650	445	27.0%
Brudenell, Lyndoch and Raglan	Township	1,497	765	205	26.8%
South Algonquin	Township	1,253	610	160	26.2%
Calvin	Township	608	240	60	25.0%
Baldwin	Township	554	245	60	24.5%
Hearst	Town	5,620	3,020	730	24.2%
Opasatika	Township	280	145	35	24.1%
Cochrane, Unorganized, North Part	Unorganized	2,447	1,230	295	24.0%
Iroquois Falls	Town	4,729	2,050	465	22.7%
Papineau-Cameron	Township	1,058	515	115	22.3%
Chapleau	Township	2,354	1,255	275	21.9%
Fauquier-Strickland	Township	568	290	60	20.7%
Mattawa	Town	2,003	785	160	20.4%
Cochrane	Town	5,487	2,750	555	20.2%

1 Source: Statistics Canada 2006 Census of Population

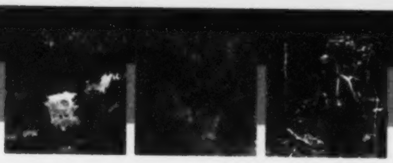
Notes:
Data for communities above 20% Forestry Workers in Labour Force shown.
Data calculated from only those communities with population greater than or equal to 240.
Forestry Workers is an aggregate of the following 4 digit classification:

Code	**Description**
1131	Timber tract operations
1132	Forest nurseries and gathering of forest products
1133	Logging
1153	Support activities for forestry
3211	Sawmills and wood preservation
3212	Veneer, plywood and engineered wood product manufacturing
3219	Other wood product manufacturing
3221	Pulp, paper and paperboard mills
3222	Converted paper product manufacturing



Appendix 5 - Acronyms Used in this Report

AOU	Area of the Undertaking
ANSI	Area of Natural and Scientific Interest
BFOLDS	Boreal Forest Landscape Dynamics Simulator
B.t.	Bacillus thuringiensis
CFSA	Crown Forest Sustainability Act
EA	Environmental Assessment
ELC	Ecological Land Classification
FMP	Forest Management Plan
FMPM	Forest Management Planning Manual for Ontario's Crown Forests
FOIP	Forest Operations Information Program
FRI	Forest Resources Inventory
FRL	Forest Resource Licence
FSPF	Forest Sector Prosperity Fund
FTG	Free-To-Grow
LCC	Local Citizens Committee
LGP	Loan Guarantee Program
MFTIP	Managed Forest Tax Incentive Program
MNR	Ministry of Natural Resources (Ontario)
MOE	Ministry of Environment (Ontario)
MOA	Memorandum of Agreement
NDPE	Forest Management Guide for Natural Disturbance Pattern Emulation
ONREM	Ontario Natural Resources Economic Model
OnTAP	Ontario Terrestrial Assessment Program
RSA	Resource Stewardship Agreement
SFL	Sustainable Forest Licence
SFMM	Strategic Forest Management Model
TOF	Trees Ontario Foundation



Appendix 6 - Documents Referenced in this Report

Most of the Ministry of Natural Resources publications referred to below are available online at:

http://www.mnr.gov.on.ca/en/Business/Forests/Publication/index.html

Most of the Provincial Acts referred to below are available online at:

http://www.e-laws.gov.on.ca/

Crown Forest Sustainability Act. Statutes of Ontario, S.O. 1994, Chapter 25 and Ontario Regulation 167/95.

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